



*Smarter Tools for
Smarter Work*

Heat Exchanger Tube Expanders and Accessories



Tools for the maintenance and
repair of...

CONDENSERS

CHILLERS

ABSORBERS

COOLERS

EVAPORATORS

Thomas C. Wilson, Inc.

The right tools for the job

To place orders, call toll-free (800) 230-2636 or fax (718) 361-2872

Thomas C. Wilson, Inc.

Thomas C. Wilson... A Family Tradition

Thomas C. Wilson, Inc. was founded by my grandfather in 1925. The company originally developed a line of air, water, and electrically driven tube cleaners which, with improvements from time to time to keep abreast of advances in metallurgy and tubular apparatus design, remains unsurpassed to the present day. These and other Wilson Tools and Accessories are now sold to the process, power, HVAC, OEM manufacturer, boiler repair, and commercial markets both domestically and abroad.

Our engineering department is continually updating our current products and developing new ones to help increase the efficiency of those working to build, repair, and maintain heat exchangers, boilers, condensers, chillers/absorbers, and similar pressure vessel products.

Our success through the years has been a direct result of our commitment to outstanding customer service. From our service hotline to our money-back guarantee, we are committed to ensuring not only the quality of our products, but also the complete satisfaction of you, our customer.

Sincerely,



Stephen Hanley
C.O.O. & President



Service Hotline

If you have technical questions about tube cleaning and expanding, or any Thomas C. Wilson, Inc. product, call us toll-free at (800) 230-2636 and talk to a knowledgeable Thomas C. Wilson, Inc. representative.

There is a Thomas C. Wilson, Inc. representative or distributor in every major city, domestically and internationally. Please write, call, or fax us to locate your area representative.



Customer Satisfaction/Money Back Guarantee

If, for any reason, you are not satisfied with your purchase, simply return it to us within 10 days and we will refund the purchase price of the unit, exclusive of shipping and handling costs.



One Year Limited Warranty

All Thomas C. Wilson, Inc. products are manufactured, tested, and inspected in accordance with strict engineering requirements and are warranted to be free from defects in materials and workmanship.*



Delivery

Thomas C. Wilson, Inc. products are delivered by all major common carriers, and next-day delivery is available. We also have same-day, counter-to-counter delivery on request.



What's On Your Mind

We're always interested in your comments! At Thomas C. Wilson, Inc., we work every day to improve our product offerings and customer service. We want to know what you think. Please write, call, or fax us with your comments or suggestions, **or reach us online at <http://www.tcwilson.com>.**

THOMAS C. WILSON, INC. MAIN FACILITY:

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(800) 230-2636 • (718) 729-3360

fax: (718) 361-2872 • e-mail: tcwilson@tcwilson.com.



How to Order



Our sales engineers are available Monday - Friday, 8:30am to 6:30pm EST. The easiest way to order is to look up the product that you would like to purchase and note the corresponding part number. Then, call toll-free (800) 230-2636. If you are not sure exactly what tool you need, just give our experienced staff the details and they will help you find the right product for your application.

You can use your Visa, Mastercard, or American Express card to order.

There is a minimum order of \$50.

All Thomas C. Wilson, Inc. products are designed and manufactured in the U.S.A.

* The warranty is subject to conditions and limitations. Call for details.

**24 HOUR SERVICE
365 days a year...Call**

1-800-230-2636

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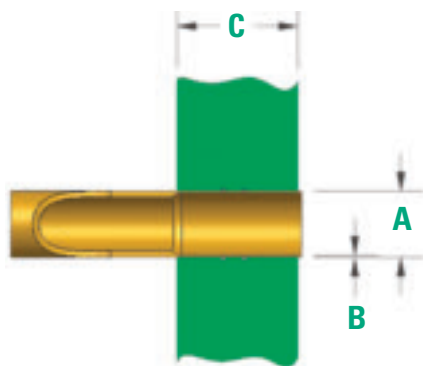
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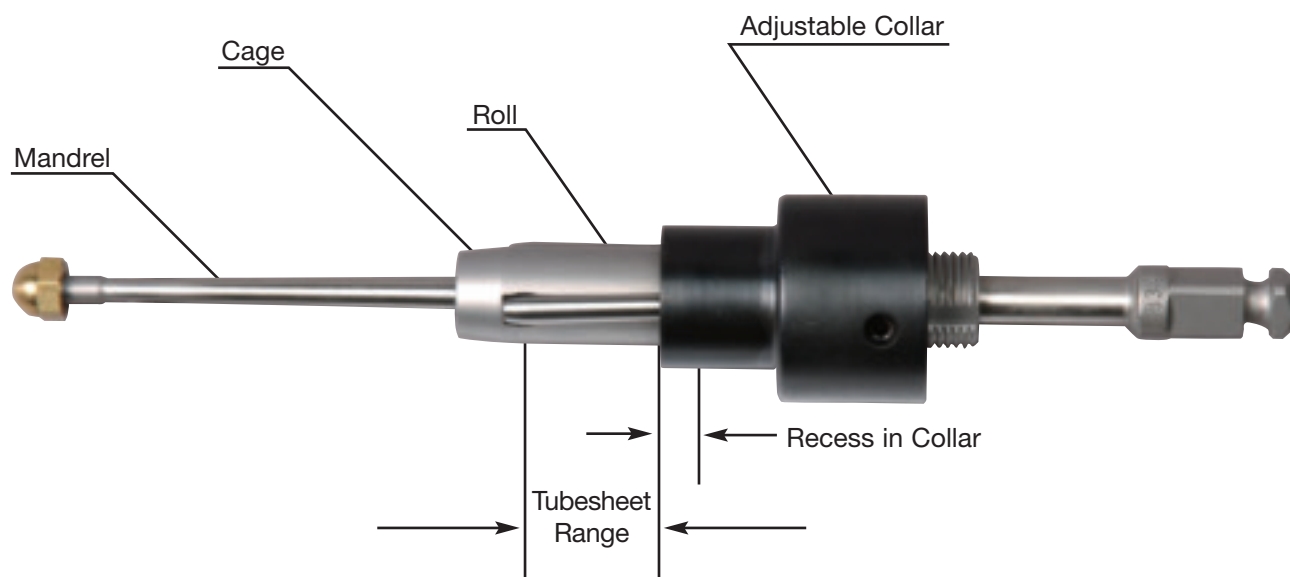
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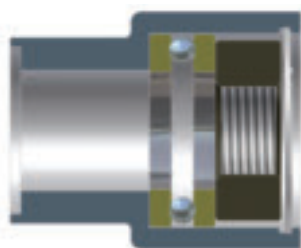
In order to ensure proper selection of expanders, the following information is needed:



- A** = Tube Outer Diameter
- B** = Gauge
- C** = Tubesheet
- D** = Tube Projection
- E** = Type of Material
- F** = Number of Tubes to be Expanded

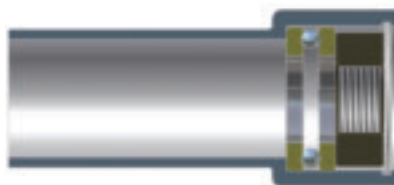


Collars



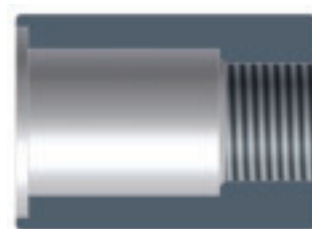
Thrust-Bearing Collar

Thrust-Bearing Collar assembly furnished on all Wilson Expanders up to 1-inch Outer Diameter tube sizes except 72 and 73 series 20-23 Gauge. Supplied with a 1/16-inch recess. Recesses up to 15/16-inch available on special order.



Deep-Recess Collar

Available for 72 and 73 Series Expander. Allows rolling on far end where tubes project up to 3 inches. Order by basic "Thin Gauge Collar." Assembly no. and required dash no. 7300 for 1-inch, 7200 for 2-inch, and 7400 for 3-inch.

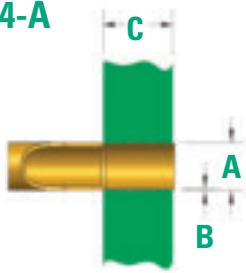


Close Collar

Optional Collar Assembly used for rolling tubes too close to shell sides, divider plates, etc. to allow the greater diameter of standard collars to pass. Collars available from flush to 15/16-inch recess for all tube expanders offered.

3-Roll Condenser Expanders - 1/4 – 3½-Inch Tubesheets

Series 41-A, 44-A



A = 1/4 (6.4mm) to 3/8-Inch (9.5mm) Tube Outer Diameter

B = 18 (1.2mm) to 28 (.4mm) Gauge

C = 41-A - 1/4 (6.4mm) to 1-Inch (25.4mm)
44-A - 1 (25.4mm) to 3½-Inch (89.0mm)

The Model 41-A and 44-A expanders were primarily designed for very small tubes as generally found on lubricating oil coolers and heat exchangers of similar characteristics. It features an adjustable ball bearing collar to meet the requirements of various thicknesses of tubesheets. The assembly comes complete with mandrel, rolls, cage, and collar with a flush (for 1/4-inch size) or 1/16-inch recess (for 3/8-inch size).

NOTE: On selection of expanders, wall thickness of tubes run either nominally or minimum wall.



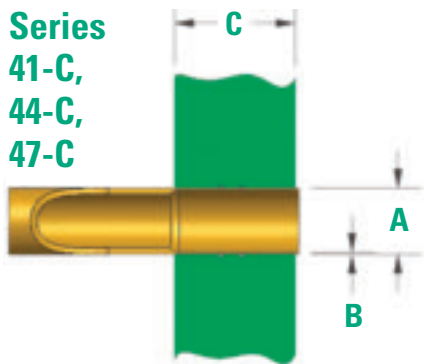
Tube			41-A Expander 1/4-1-Inch Reach			44-A Expander 1-3½-Inch Reach			1-Inch (25.4) Roll Length Common Roll Set - Part No.
OD Inches (mm)	GA	Range Inches (mm)	Assembly Part No.	Mandrel Part No.	Cage Part No.	Assembly Part No.	Mandrel Part No.	Cage Part No.	
1/4 (6.4)	18	.147-.174 (3.7-4.4)	34339	34380	34348	-	-	-	34375
	19	.159-.186 (4.0-4.7)	34388		34389	-	-	-	34390
	20	.175-.202 (4.4-5.1)	34338		34347	-	-	-	34374
	21	.180-.207 (4.6-5.3)	34385	34379	34386	-	-	-	
	22	.189-.216 (4.8-5.5)	34337		34346	-	-	-	
	23	.195-.222 (5.0-5.6)	34408		34413	-	-	-	34417
	24	.201-.228 (5.1-5.8)	34336		34345	-	-	-	34373
	26	.209-.236 (5.3-6.0)	34407		34412	-	-	-	34416
3/8 (9.5)	28	.216-.244 (5.5-6.2)	34391		34400	-	-	-	34399
	15	.225-.266 (5.7-6.8)	34418	34378	34419	33955	33954	33965	34373
	16	.237-.278 (6.0-7.1)	34335		34344	33956		33966	34372
	17	.253-.294 (6.4-7.5)	34406		34411	33957		33967	34399
	18	.269-.310 (6.8-7.9)	34334	34377	34343	33958	33953	33968	34371
	19	.283-.324 (7.2-8.2)	34405		34410	33959		33969	34415
	20	.297-.338 (7.5-8.6)	34333		34342	33960		33970	34370
	21	.303-.344 (7.7-8.7)	34365	34366	34367	33961	33949	33971	
	22	.311-.352 (7.9-8.9)	34332		34341	33962		33972	
	23	.317-.358 (8.1-9.1)	34404	34376	34409	33963	33952	33973	34414
	24	.323-.364 (8.2-9.2)	34331		34340	33964		33974	34369

TUBE WALL THICKNESS OF WALL IN BIRMINGHAM WIRE GAUGE

GA	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
Inch	.014	.016	.018	.020	.022	.025	.028	.032	.035	.042	.049	.058	.065	.072	.083	.095	.109	.120	.134	.148	.165	.180	.203
mm	.4	.4	.5	.5	.6	.6	.7	.8	.9	1.1	1.2	1.5	1.7	1.8	2.1	2.4	2.8	3.0	3.4	3.8	4.2	4.6	5.2

3-Roll Condenser Expanders

Series
41-C,
44-C,
47-C



A = 1/2 (12.7mm) to 1½-Inch (38.1mm) Tube Outer Diameter

B = 9 (3.8mm) to 22 (.7mm) Gauge

C = 41-C - 1/2 (12.7mm) to 1½-Inch (38.1mm) Tubesheet

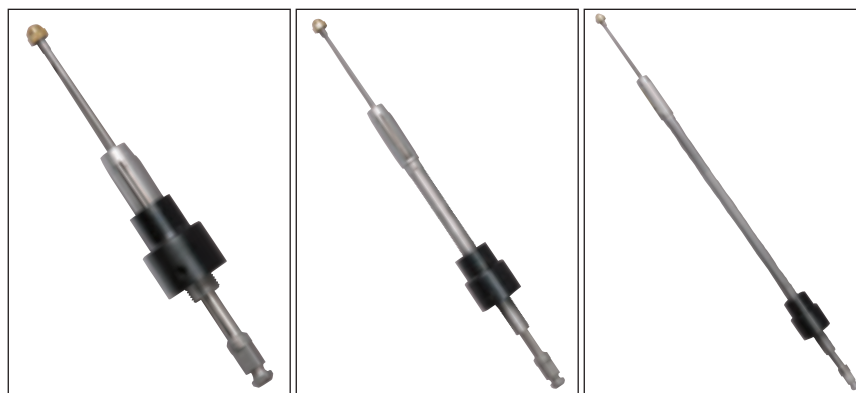
44-C - 1¼ (31.8mm) to 6-Inch (152.4mm) Tubesheet

47-C - 1¼ (38.1mm) to 12-Inch (304.8mm) Tubesheet

47-C and 47-D Expanders are similar in design to the Models 41 and 44 previously described. However, the threaded shanks are extra-long and suitable for the unusual conditions of extra-thick or widely spaced multiple tubesheets.

The Model 41-C and 41-D Expanders are suitable for condensers and/or evaporators, heaters or coolers of power, refrigeration, air conditioning, marine, coke, and chemical plants.

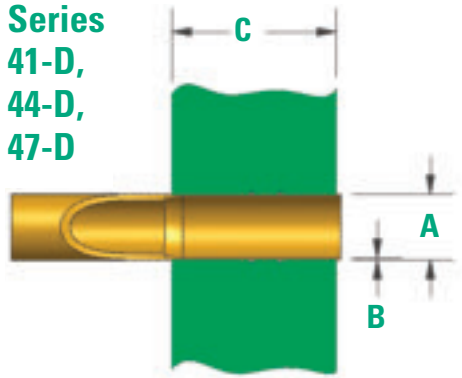
The long-reach 44-C and 44-D Expanders are particularly suitable for thick and multiple tubesheet applications where *step rolling* is practiced. They are unsurpassed for use on condensers and heat exchangers of oil refineries, chemical plants, atomic energy installations, and others.



1½-Inch
(38.1)
Roll Length
Common
Roll Set
Part No.

Tube			41-C Expander			44-C Expander			47-C Expander			Common Roll Set Part No.
OD Inches (mm)	GA	Range Inches (mm)	Assembly	Mandrel	Cage	Assembly	Mandrel	Cage	Assembly	Mandrel	Cage	
1/2 (12.7)	14	.320-.370 (8.1-9.4)	34043	33454	34322	34143	33455	39739	-	-	-	33371
	15	.342-.390 (8.7-9.9)	34042		34320	34142		39740	-	-	-	33360
	16-17	.360-.411 (9.1-10.4)	34000	33400	33040	34100	33430	33240	-	-	-	33361
	18-19	.392-.447 (10.0-11.4)	34001		33041	34101		33241	41597	38567	38566	
	20-22	.425-.481 (10.5-12.2)	40582		33042	34102		33242	41598	41868	38568	
5/8 (15.9)	12	.392-.447 (10.0-11.4)	39366	33400	33041	39369	33430	33241	39445	38567	38566	33362
	13	.425-.481 (10.5-12.2)	34051		33042	34099		33242	38554		38568	
	14	.444-.513 (11.3-13.0)	41034		33043	41393		33243	41397	41868	38569	
	15-17	.464-.537 (11.8-13.6)	38388		38619	38396		38623	39447		39448	33375
	18-19	.497-.571 (12.6-14.5)	38394	41531	39807	38392	41548	39549	39449		39450	33376
	20-22	.542-.600 (13.8-15.2)	40585		33046	39593		33246	39607	41550	38571	33364
	10	.444-.513 (11.3-13.0)	34003		33043	34103		33243	38555	41868	38569	33362
3/4 (19.1)	11	.482-.550 (12.2-14.0)	34004	41866	33044	34104	41867	33244	38575		38576	33363
	12	.508-.583 (12.9-14.8)	34005		33045	34105		33245	38556		38570	
	13-14	.542-.625 (13.8-15.9)	34006	33402	33046	34106	33432	33246	38557	33932	38571	33364
	15-17	.589-.681 (15.0-17.3)	34008		33048	34108		33248	38579	33933	38580	33365
	18-22	.635-.722 (16.1-18.3)	34009		33049	34109		33249	39453	33934	39454	
	11	.589-.681 (15.0-17.3)	34008	33403	33048	34108	33433	33248	38579	33933	38580	
7/8 (22.2)	12-13	.635-.722 (16.1-18.3)	34010	33404	33049	34110	33434	33249	39456	33934	39454	33366
	14-15	.686-.781 (17.4-19.8)	34011	33405	33051	34111	33435	33251	39457	33935	39458	
	16-17	.717-.815 (18.2-20.7)	34013	33407	33053	34113	33437	33253	39461	33937	39462	
	18-22	.758-.855 (19.3-21.7)	34015	33406	33055	34115	33436	33255	39465	33936	39466	33367
	9	.686-.781 (17.4-19.8)	34011	33405	33051	34111	33435	33251	39457	33935	39458	33366
	10	.701-.800 (17.8-20.3)	34012	33406	33052	34112	33436	33252	39459	33936	39460	
1 (25.4)	11	.717-.815 (18.2-20.7)	34013	33407	33053	34113	33437	33253	39461	33937	39462	
	12-13	.758-.855 (19.3-21.7)	34015	33406	33055	34115	33436	33255	39465	33936	39466	33367
	14-16	.794-.919 (20.2-23.3)	34018	33408	33058	34118	33438	33258	39469	33938	39470	33368
	17-22	.856-.980 (21.7-24.9)	40579	33411	33062	41399	33441	33262	41403	33941	38611	33369
	9-10	.794-.919 (20.2-23.3)	41869	33408	33058	42326	33438	33258	-	-	-	33368
	11-14	.856-.999 (21.7-25.4)	34022	33411	33062	34122	33441	33262	-	-	-	33369
1½ (38.1)	15-22	.950-1.106 (24.1-28.1)	41014	41012	33067	41405	41013	33267	-	-	-	33370
	9-11	.920-1.076 (23.4-27.3)	34025	33412	33065	34125	33442	33265	39481	33942	39482	
	12-13	.950-1.106 (24.1-28.1)	34027	33414	33067	34127	33444	33267	39485	33944	39486	
	14-22	1.055-1.235 (26.8-31.4)	40588	33415	33071	41407	33445	33271	41864	33945	39492	33372
	10-13	1.055-1.250 (26.8-31.8)	34031		33071	34131		-	-	-	-	33373
	14-20	1.185-1.350 (30.1-34.3)	40589		33074	41409		33274	-	-	-	
1½ (38.1)	10-13	1.185-1.375 (30.1-34.9)	34034	33416	33074	34134	33446	33277	39497	33945	39498	33374
	14-18	1.310-1.460 (33.3-37.1)	34037		33077	34137		33277	39503	33946	39504	

Series 41-D, 44-D, 47-D



A = 1/2 (12.7mm) to 2½-Inch (63.5mm) Tube Outer Diameter

B = 9 (3.8mm) to 22 (.7mm) Gauge

C = 41-D - 1¼ (31.8mm) to 2¼-Inch (57.2mm) Tubesheet
 44-D - 2 (50.8mm) to 6¼-Inch (171.5mm) Tubesheet
 47-D - 2 (50.8mm) to 12¾-Inch (323.9mm) Tubesheet



How to Identify Wilson Rolls

The assembly comes complete with mandrel, rolls, cage, and collar with a 1/16-inch standard recess.

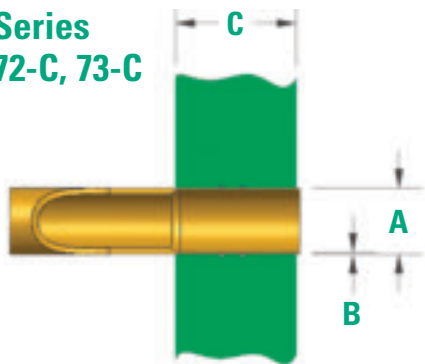


Tube		Range		41-D Expander			44-D Expander			47-D Expander			2½-Inch (57.2) Roll length Common Roll Set Part No
Inches	OD (mm)	GA	Inches (mm)	Assembly	Mandrel	Cage	Assembly	Mandrel	Cage	Assembly	Mandrel	Cage	
1/2	(12.7)	18-19	.392-.447 (10.0-11.4)	39734	33400	39368	41414	33430	39371	41601	38567	39506	33381
		20-22	.425-.481 (10.5-12.2)	40616	33401	33184	41415	33431	33456	41602	33931	33852	
5/8	(15.9)	12	.392-.447 (10.0-11.4)	39367	33400	39368	39370	33430	39371	39505	38567	39506	33382
		13	.425-.481 (10.5-12.2)	34052	33401	33184	34152	33431	33456	33802	33931	33852	
		14	.444-.513 (11.3-13.0)	41035		33133	41394		33323	41398		33853	
		15-17	.464-.537 (11.8-13.6)	38389		38621	38397		38624	38627		38628	
		18-19	.497-.571 (12.6-14.5)	38395	41531	39805	38393	41548	39554	39507	41550	39508	
		20-22	.542-.600 (13.8-15.2)	40591		33136	39597		33326	39610		33856	
3/4	(19.1)	10	.444-.513 (11.3-13.0)	34053	33401	33133	34153	33431	33323	33803	33931	33853	33383
		11	.482-.550 (12.2-14.0)	34054		33134	34154		33324	33804		33854	
		12	.508-.583 (12.9-14.8)	34055		33135	34155		33325	33805		33855	
		13-14	.542-.625 (13.8-15.9)	34056	33402	33136	34156	33432	33326	33806	33932	33856	
		15-17	.589-.681 (15.0-17.3)	34058	33403	33138	34158	33433	33328	33808	33933	33858	
		18-22	.635-.722 (16.1-18.3)	34059	33404	33139	34159	33434	33329	33809	33934	33859	
7/8	(22.2)	11	.589-.681 (15.0-17.3)	34058	33403	33138	34158	33433	33328	33808	33933	33858	33385
		12-13	.635-.722 (16.1-18.3)	34060	33404	33139	34160	33434	33329	33810	33934	33859	
		14-15	.686-.781 (17.4-19.8)	34061	33405	33141	34161	33435	33331	33811	33935	33861	
		16-17	.717-.815 (18.2-20.7)	34063	33407	33143	34163	33437	33333	33813	33937	33863	
		18-22	.758-.855 (19.3-21.7)	34065	33406	33145	34165	33436	33335	33815	33936	33865	
		9	.686-.781 (17.4-19.8)	34061	33405	33141	34161	33435	33331	33811	33935	33861	
1	(25.4)	10	.701-.800 (17.8-20.3)	34062	33406	33142	34162	33436	33332	33812	33936	33862	33386
		11	.717-.815 (18.2-20.7)	34063	33407	33143	34163	33437	33333	33813	33937	33863	
		12-13	.758-.855 (19.3-21.7)	34065	33406	33145	34165	33436	33335	33815	33936	33865	
		14-16	.794-.919 (20.2-23.3)	34068	33408	33148	34168	33438	33338	33818	33938	33868	
		17-22	.856-.980 (21.7-24.9)	40592	33411	33152	41400	33441	33342	41404	33941	33872	
		9-10	.794-.919 (20.2-23.3)	41870	33408	33148	42327	33438	33338	-	-	-	
1½	(28.6)	11-14	.856-.999 (21.7-25.4)	34072	33411	33152	34172	33441	33342	-	-	-	33389
		15-22	.950-1.106 (24.1-28.1)	41015	41012	33157	41406	41013	33347	-	-	-	
		9-11	.920-1.076 (23.4-27.3)	34075	33412	33155	34175	33442	33345	33825	33942	33875	
1¼	(31.8)	12-13	.950-1.106 (24.1-28.1)	34077	33414	33157	34177	33444	33347	33827	33944	33877	33390
		14-22	1.055-1.235 (26.8-31.4)	40593	33415	33161	41408	33445	33351	41865	33945	33881	
1%	(34.9)	10-13	1.055-1.250 (26.8-31.8)	34081			34181		-	-	-	-	33392
		14-20	1.185-1.350 (30.1-34.3)	40594			41410		-	-	-	-	
1½	(38.1)	10-13	1.185-1.375 (30.1-34.9)	34084	33416	33164	34184	33446	33354	33834	33945	33884	33393
		14-18	1.310-1.460 (33.3-37.1)	34087		33167	34187		33357	33837	33946	33887	
1%	(44.5)	8-13	1.372-1.620 (34.8-41.1)	34089		33169	34310		33359	-	-	-	33394
		14-18	1.495-1.710 (38.0-43.4)	40595	33419	33171	41412	33449	33425	-	-	-	
2	(50.8)	7-8	1.495-1.744 (38.0-44.3)	34091			34312		-	-	-	-	33395
		9-11	1.630-1.876 (41.4-47.7)	34093		33173	34314		33322	-	-	-	
		12-18	1.753-1.972 (44.5-50.1)	34095	33422	33175	34316	33452	33183	-	-	-	
2¼	(57.2)	10-18	1.926-2.213 (48.9-56.2)	34096		33176	34317		33427	-	-	-	33396
2½	(63.5)	10-18	2.176-2.462 (55.3-62.5)	34097		33177	34318	33453	33428	-	-	-	

Expander Series

4- & 5-Roll Condenser Expanders - 1/2 – 6¼-Inch Tubesheets

Series 72-C, 73-C



A = 1/2 (12.7mm) to 1½-Inch (38.1mm) Tube Outer Diameter

B = 13 (2.4mm) to 25 (.5mm) Gauge

C = 72-C - 1/2 (12.7mm) to 1½-Inch (38.1mm) Tubesheet

73-C - 3/4 (19.1mm) to 5½-Inch (139.7mm) Tubesheet

These expanders are used on light Gauge tubes of stainless steel, titanium, and materials of similar hardness.

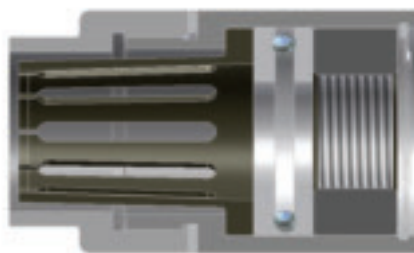
5-Rolls with light wall tubes can prevent triangulation of the tube to the tube hole. Wilson Thin Gauge Collars also offer a large advantage for projection of tube.



Tube		72-C Expander 1/2-1½-Inch Reach				73-C Expander 3/4-5½-Inch Reach			1½-Inch (38.1) Roll Length Common Roll Set - Part No.			
OD <i>Inches (mm)</i>	Wall GA	Range <i>Inches (mm)</i>		Assembly Part No.	Mandrel Part No.	Cage Part No.	Assembly Part No.	Mandrel Part No.	Cage Part No.			
1/2 (12.7)	18-19	.387-.449	(9.8-11.4)	41552	41879	41511	—	—	—	33361-4		
	20-25	.425-.480	(10.5-12.2)	41553	41880	41512	—	—	—			
5/8 (15.9)	18-19	.515-.570	(13.1-14.5)	41554	41881	41513	41936	42064	42000	33362-4		
	20-25	.537-.596	(13.6-15.1)	41555		41514	41937		42001	33375-4		
3/4 (19.1)	13-14	.537-.596	(13.6-15.1)	41556	41882	41515	42331	42066	42002	33363-5		
	16-17	.605-.676	(15.2-17.2)	41557			41938					
	18-19	.635-.715	(16.1-18.2)	41558			41833		41516		41939	42003
	20-25	.665-.750	(16.9-19.1)	41559		41884	41517	41940	42067	42004	33364-5	
7/8 (22.2)	16-17	.717-.795	(18.2-20.2)	41560	41518		41941	42069	42005	33365-5		
	18-19	.758-.859	(19.3-21.9)	41561	41519	41942	42006					
	20-25	.790-.885	(20.1-22.5)	41562	41885	41520	41943		42007			
1 (25.4)	13-15	.790-.885	(20.1-22.5)	41563	41886	41521	42332	42070	42008	33366-5		
	16-17	.850-.922	(21.6-23.4)	41564			41944					
	18-19	.885-.950	(22.5-24.1)	41565			41887		41522		41945	42009
	20-25	.915-1.015	(23.2-25.8)	41566			41888		41523		42303	42071
1¼ (28.6)	18-19	1.010-1.075	(25.7-27.3)	41567	41889	41524	41946	42072	42010	33369-5		
	20-25	1.040-1.125	(26.4-28.6)	41568			41947		42011			
1½ (31.8)	18-19	1.135-1.200	(28.8-30.5)	41569	41890	41530	41948	42073	42012	33370-5		
	20-25	1.165-1.250	(29.6-31.8)	41570	41891	41532	41949		42013			
1¾ (38.1)	18-19	1.385-1.450	(35.2-36.8)	41571	41892	41533	41950	42074	42014	33372-5		
	20-25	1.415-1.500	(35.9-38.1)	41572	42297	41534	41951	42075	42015			

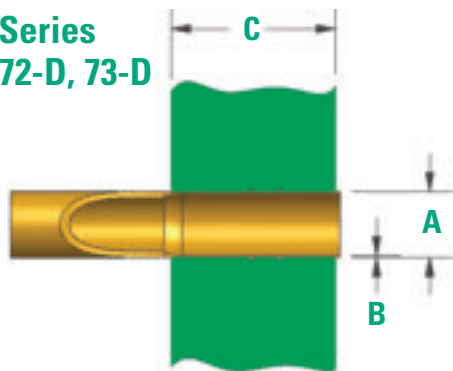
Thin Gauge Collar

Thin Gauge Collar assembly supplied on all 5-Roll, Series 72 and 73, 20-23 Gauge Expanders. Recess adjustable by use of space washers. Unique design maintains tube end contact throughout expansion.



TUBE WALL THICKNESS OF WALL IN BIRMINGHAM WIRE GAUGE

GA	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
Inch	.014	.016	.018	.020	.022	.025	.028	.032	.035	.042	.049	.058	.065	.072	.083	.095	.109	.120	.134	.148	.165	.180	.203
mm	.4	.4	.5	.5	.6	.6	.7	.8	.9	1.1	1.2	1.5	1.7	1.8	2.1	2.4	2.8	3.0	3.4	3.8	4.2	4.6	5.2

**Series
72-D, 73-D****A** = 1/2 (12.7mm) to 1½-Inch (38.1mm) Tube Outer Diameter**B** = 13 (2.4mm) to 25 (.5mm) Gauge**C** = 72-D - 1/2 (12.7mm) to 2¼-Inch (57.2mm) Tubesheet

73-D - 1½ (38.1mm) to 6¼-Inch (158.8mm) Tubesheet

The assembly comes complete with mandrel, rolls, cage, and collar with a 1/16-inch standard recess.



Tube				72-D Expander 1/2-2¼-Inch Reach			73-D Expander 1½-6¼-Inch Reach			2¼-Inch (57.2) Roll Length Common Roll Set - Part No.		
OD <i>Inches (mm)</i>	Wall GA	Range <i>Inches (mm)</i>		Assembly Part No.	Mandrel Part No.	Cage Part No.	Assembly Part No.	Mandrel Part No.	Cage Part No.			
1/2 (12.7)	18-19	.387-.449	(9.8-11.4)	42248	42286	42267	—	—	—	33380-4		
	20-25	.425-.480	(10.5-12.2)	42249	42287	42268	—	—	—			
5/8 (15.9)	18-19	.515-.570	(13.1-14.5)	42250	42288	42269	41952	42064	42016	33382-4		
	20-25	.537-.596	(13.6-15.1)	42251		42270	41953		42017	33377-4		
3/4 (19.1)	13-14	.537-.596	(13.6-15.1)	42329	42289	42271	42333	42066	42018	33383-5		
	16-17	.605-.676	(15.2-17.2)	42252			41954				42019	
	18-19	.635-.715	(16.1-18.2)	42253			41955		42067		42020	33384-5
	20-25	.665-.750	(16.9-19.1)	42254			42273				41956	42021
7/8 (22.2)	16-17	.717-.795	(18.2-20.2)	42255	42291	42275	41957	42069	42022			
	18-19	.758-.859	(19.3-21.9)	42256			41958		42023			
	20-25	.790-.885	(20.1-22.5)	42257			42276			41959		
1 (25.4)	13-15	.790-.885	(20.1-22.5)	42330	42292	42277	42334	42070	42024	33386-5		
	16-17	.850-.922	(21.6-23.4)	42258			41960		42025			
	18-19	.885-.950	(22.5-24.1)	42259			41961		42071		42308	33387-5
	20-25	.915-1.015	(23.2-25.8)	42260			42279				42304	
1½ (28.6)	18-19	1.010-1.075	(25.7-27.3)	42261	42294	42280	41962	42072	42026	33389-5		
	20-25	1.040-1.125	(26.4-28.6)	42262		42281	41963		42027			
1¼ (31.8)	18-19	1.135-1.200	(28.8-30.5)	42263	42295	42282	41964	42073	42028	33390-5		
	20-25	1.165-1.250	(29.6-31.8)	42264		42283	41965		42029			
1½ (38.1)	18-19	1.385-1.450	(35.2-36.8)	42265	42296	42284	41966	42074	42030	33392-5		
	20-25	1.415-1.500	(35.9-38.1)	42266	42297	42285	41967	42075	42031			

Expander Lube - Type B

Wilson Expander Lube is a water-soluble lubricant especially compounded for use with tube expanders. When rolling large or small, ferrous or non-ferrous tubes, use **Wilson Expander Lube** for smoother rolling and longer expander life. For clean tube ends after rolling, simply wash with water. **Wilson Type B** Expander Lube is used straight from the can without dilution.

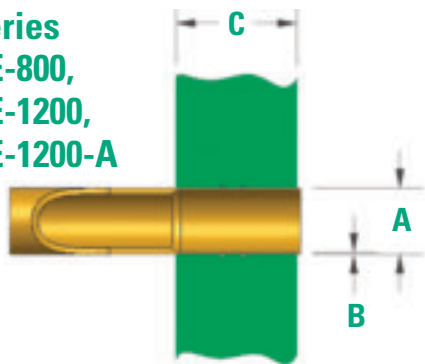


Expander Lube Type B	Part No.
1 Quart Can	28115-0002
1 Gallon Can	28115-0009
5 Gallon Can	28115-0005
30 Gallon Drum	28115-0030
55 Gallon Drum	28115-0055

Expander Series

Universal Tube Expanders - 1/2 – 12½-Inch Tubesheets

Series
UE-800,
UE-1200,
UE-1200-A



A = 1/2 (12.7mm) to 1½-Inch (38.1mm) Tube Outer Diameter

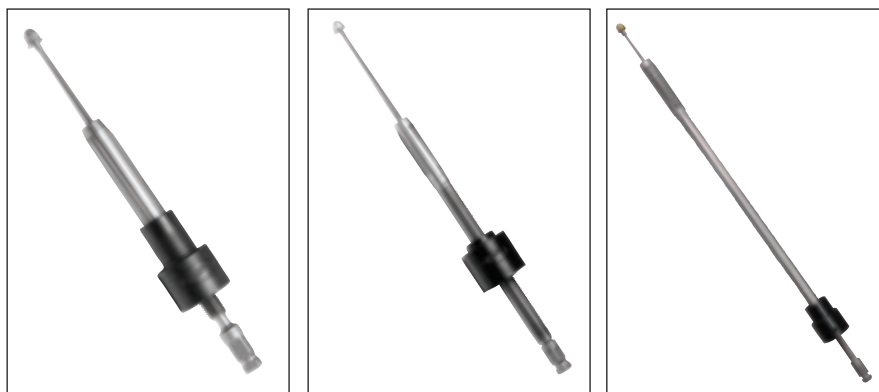
B = 11 (3.0mm) to 22 (.7mm) Gauge

C = UE-800 - 1¼ (31.8mm) to 2¼-Inch (57.2mm) Tubesheet

UE-1200 - 2¼ (57.2mm) to 6¼-Inch (171.5mm) Tubesheet

UE-1200-A - 2¼ (57.2mm) to 12¼-Inch (323.9mm) Tubesheet

These series of expanders are completely interchangeable with the Airetool design expander on the market. For example, a M-56 Mandrel is part #43358. Made by Thomas C. Wilson with excellent quality and performance.



Tube		Range	UE-800 Expander			UE-1200 Expander			UE-1200-A Expander			2¼-Inch (57.2) Roll Length Common Roll Set
OD	Tube		Assembly	Mandrel	Cage	Assembly	Mandrel	Cage	Assembly	Mandrel	Cage	
Inches	(mm)	Inches (mm)										
5/8	(15.9)	15 .471-.536 (12.0-13.6)	43812	43305	43412	43212	43355	43512	43612	43955	43712	43105
		16 .485-.550 (12.3-14.0)	43814		43414	43214		43514	43614		43714	43106
		17 .499-.564 (12.7-14.3)	43816	43306	43416	43216	43356	43516	43616	43956	43716	
		18 .517-.572 (13.1-14.5)	43818	43307	43418	43218	43357	43518	43618	43957	43718	
		19 .522-.582 (13.3-14.8)	43820	43306	43420	43220	43356	43520	43620	43956	43720	43107
		20-22 .536-.596 (13.6-15.1)	43820A	43308	43420A	43220A	43358	43520A	43620A	43958	43720A	
3/4	(19.1)	12 .522-.582 (13.3-14.8)	43820	43306	43420	43220	43356	43520	43620	43956	43720	
		13 .550-.615 (14.0-15.6)	43822		43422	43222		43522	43622		43722	43108
		14 .574-.639 (14.6-16.2)	43824	43308	43424	43224	43358	43524	43624	43958	43724	43109
		16 .605-.685 (15.4-17.4)	43828		43428	43228		43528	43628		43728	43110
		17-18 .619-.699 (15.7-17.8)	43830	43309	43430	43230	43359	43530	43630	43959	43730	43111
		19-22 .642-.722 (16.3-18.3)	43832		43432	43232		43532	43632		43732	43112
7/8	(19.1)	14 .685-.774 (17.4-19.7)	43836	43311	43436	43236	43361	43536	43636	43961	43736	43114
		15 .712-.801 (18.1-20.3)	43838		43438	43238		43538	43638		43738	
		16 .726-.815 (18.4-20.7)	43840		43440	43240		43540	43640		43740	43115
		17-18 .740-.829 (18.8-21.1)	43844	43312	43444	43244	43362	43544	43644	43962	43744	43116
1	(25.4)	11 .740-.829 (18.8-21.1)										
		12 .763-.852 (19.4-21.6)	43846		43446	43246		43546	43646		43746	43117
		13 .791-.880 (20.1-22.4)	43848		43448	43248		43548	43648		43748	43118
		14 .810-.909 (20.6-23.1)	43850		43450	43250		43550	43650		43750	
		15-16 .837-.936 (21.3-23.8)	43852	43313	43452	43252	43363	43552	43652	43963	43752	43119
		17-20 .865-.964 (22.0-24.5)	43856		43456	43256		43556	43656		43756	43121
1½	(28.6)	15-16 .962-1.071 (24.4-27.2)	43864	43315	43464	43264	43365	43564	43664	43965	43764	43124
		17-18 .990-1.099 (25.1-27.9)	43868	43316	43468	43268	43366	43568	43668	43966	43768	43126
1¼	(31.8)	15-16 1.087-1.196 (27.6-30.4)	43876	43317	43476	43276	43367	43576	43676	43967	43776	
		17-18 1.115-1.224 (28.3-31.1)	43880	43318	43480	43280	43368	43580	43680	43968	43780	43130
1%	(34.9)	14 1.179-1.294 (29.9-32.9)	43886	43320	43486	43286	43370	43586	43686	43970	43786	43134
		15-16 1.206-1.321 (30.6-33.6)	43888		43488	43288		43588	43688		43788	43135
		13-14 1.285-1.400 (32.6-35.6)	43896		43496	43296	43371	43596	43696	43971	43796	43137
1½	(38.1)	15-16 1.331-1.446 (33.8-36.7)	43898	43321	43498	43298		43598	43698		43798	
		17-20 1.331-1.472 (33.8-37.4)	43900		43500	43300	43372	43600	43700	43972	43800	43138

Lubrication, Care, and Maintenance of Tube Expanders

The service demanded of tube expanders is severe; therefore, these precision tools should be given a reasonable amount of care. For long, trouble-free, and economical service, the following is suggested:

- Remove all rust, mill scale, and other foreign matter from inside and outside of tube. Foreign matter on the inside of the tube will tend to become embedded into the tube wall and may cause flaking or galling of the rolls and mandrel. Mill scale or grit left on the outer wall of the tube can cause damage to the tube seat and prevent the formation of a pressure-tight joint. Cleaning of the tube ends may be best accomplished by wire brushing or polishing. Remove protective coating by washing with light oil* or kerosene.
- Before using, expander should be washed in any commercial solvent to remove anti-rust, dirt, grease, and other foreign matter. Inspect expander to make sure that the rolls and mandrel are free and in good condition.
- Before using, expander should be properly lubricated with a pressure-resistant lubricant. We recommend using Wilson Expander Lube. This water-soluble lubricant was developed for tube rolling and may be mixed with water to the desired consistency. For small diameter and light tube gauges, immerse the expander in Wilson Expander Lube or a light-bodied oil* such as SAE 10 or 20. For large diameter and heavy Gauge tubes, swab or brush the expander with Wilson Expander Lube or a mixture of SAE 40* and graphite.
- Expanders should be rotated at a speed proportionate to the tube size, Gauge, and length of the tube seat. Tube metal must also be taken into consideration. The proper speed will provide the safe cold working of tube metal without crystallization or flaking. It will also ensure maximum expander life without undue roll or mandrel breakdown. The ideal speed will keep to a minimum mandrel slippage and heating of mandrels and rolls.
- After rolling each tube, clean and cool the expander in a solvent or light oil*, and then properly lubricate the expander. It is a good practice to use two expanders, if possible, so that one can be cooling while the clean expander is being used.
- Inspect the rolls and mandrel after rolling each tube. Replace any chipped rolls or mandrels immediately. A small chip in a roll can damage the entire set of rolls and mandrel if not replaced at once.
- After the job has been completed, the expander should be cleaned thoroughly with a commercial solvent or a light oil* and stored in a manner which will avoid possibility of parts rusting.

*CAUTION:

The presence of oil in the space between tube and tube seat of unrolled joints can prevent the formation of a leaktight joint. Do not allow an excess of lubricant to run down face of sheet, where it can seep into the spaces of unrolled joints.



Some Guidelines for Tube Expansion

Improperly rolled joints require additional expense to correct, whether they are under-rolled and can be corrected merely by rerolling, or over-rolled and require removal and replacement. The optimal joint is one that develops a leaktight joint with adequate strength for the service intended, with the minimum amount of cold working or reduction of the tube wall. Experience indicates that joints of this type are obtainable with non-ferrous tubes in surface condensers by expanding to a wall reduction of 3 to 4 percent after metal-to-metal contact of the tube Outer Diameter with the tubesheet hole. Steel tubes in heat exchangers may require wall reductions of 5 to 10 percent; soft copper and aluminum tubes in heat exchangers also require larger wall reductions in the area of 8 to 12 percent. Boiler tubes requiring development of optimum joint strength require wall reductions of 12 to 14 percent.

A typical example of the application of this method is indicated for a 3/4" x 18" Gauge tube in a condenser.

1.	Tubesheet Hole	=	.760
	Tube Outer Diameter	=	<u>-.750</u>
	Clearance		.010
2.	Tube Inner Diameter	=	.652
	Clearance	=	<u>+.010</u>
	Inner Diameter @ Metal to Metal		.662
3.	4% of .049 x 2	=	.004
	Tube Inner Diameter @ Metal to Metal	=	<u>+.662</u>
	Expanded Tube Inner Diameter		.666

TUBE WALL THICKNESS OF WALL IN BIRMINGHAM WIRE GAUGE

GA	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
Inch	.014	.016	.018	.020	.022	.025	.028	.032	.035	.042	.049	.058	.065	.072	.083	.095	.109	.120	.134	.148	.165	.180	.203
mm	.4	.4	.5	.5	.6	.6	.7	.8	.9	1.1	1.2	1.5	1.7	1.8	2.1	2.4	2.8	3.0	3.4	3.8	4.2	4.6	5.2

Wilson Torq-Air-Matic™ Expander Drives

Reversible, Muffled, Controlled Tube Expansion



3A - Torq-Air-Matic™ Kit



B - Torq-Air-Matic™ Kit

Applications

- Rolling ferrous and non-ferrous tubes in heat exchangers and other pressure vessels
- 1/2 to 1½-Inch (12.7 to 38.1mm) Outer Diameter Tubes

Specifications

• 3A Torq-Air-Matic™ Kit

Weight: Drive: 9 lbs. (4 Kg)
Kit: 21 lbs. (9.5 Kg)
Air Consumption: 32 SCFM Maximum
Length: 9.5 Inches (241 mm)
Side to Center: 2 Inches (50.8 mm)
Drive: 1/2-Inch Ball Drive Spindle

• B Torq-Air-Matic™ Kit

Weight: Drive: 14.5 lbs. (6.6 Kg)
Kit: 30.5 lbs. (13.8 Kg)
Air Consumption: 60 SCFM Maximum
Length: 12 Inches (305 mm)
Side to Center: 2 Inches (50.8 mm)
Drive: 1/2-Inch Spindle Square

Torq-Air-Matic™ Kit Includes:

- Torq-Air-Matic™ Drive
- Set of Rotor Blades
- Operating Hose
- Mandrel Connector
- Air Line Filter
- 1-Quart Expander Lube
- Hex Keys
- Carrying Case
- Service Manual



Model	Tube Capacities	Torq-Air-Matic™ Kit Part No.	Free Speed rpm	Maximum Torque		Minimum Torque	
				Ft. lbs.	Nm	Ft. lbs.	Nm
3A	1/2 to 7/8-Inch x 18 GA non-ferrous	40509	1000	10	13.6	3	4
	1/2 to 3/4-Inch ferrous						
	1/2 to 1-Inch non-ferrous	40510	750	12	16.3	3	4
	1/2 to 3/4-Inch ferrous						
	1/2 to 1½-Inch non-ferrous	40511	450	18	24.4	3	4
B	1/2 to 1-Inch ferrous						
	3/4 to 1-Inch OD Tubes	40515	750	24	33	3	4
	3/4 to 1½-Inch OD Tubes	40516	600	30	41	3	4
	3/4 to 1½-Inch OD Tubes	40517	450	40	54	3	4

* Other Drives Available - Consult Factory

Reversible, Muffled Air Motor



Model 952
Torque-Controlled Auto-Reverse



Model 930

Applications

- Rolling ferrous and non-ferrous tubes in heat exchangers and other pressure vessels
- 3/8 to 1½-Inch (9.5 to 31.8mm) Outer Diameter Tubes

Specifications

• Model 952: Torque-Controlled Auto-Reverse

Weight: 2.5 lbs. (1.2 Kg)
Air Consumption: 19 CFM
Length: 8½ Inches (215 mm)
Side to Center: 1½ Inches (39 mm)
Drive: 3/8-Inch Square Spindle

• Model 930:

Weight: Drive: 4.5 lbs. (2 Kg)
Air Consumption: 32 SCFM Maximum
Length: 7½ Inches (190 mm)
Side to Center: .9 Inches (23 mm)
Drive: 1/2-Inch Ball Drive Spindle

952 Kit Includes:

- Drive Motor
- 1/4-Inch Square Quick Connector
- Quick Torque Adjustment Tool
- Carrying Case 42878
- Service Manual SM-155

930 Kit Includes:

- Drive Motor
- 3/8-Inch Square Quick Connector 41337
- Hex Keys (3/16)
- Carrying Case 42878
- Service Manual SM-79D



Tube Capacities	Drive Motor Part No.	Free Speed rpm	Maximum Torque		Minimum Torque	
			Ft. lbs.	Nm	Ft. lbs.	Nm
Up to 3/8-Inch non-ferrous	952-1800	1800	3.6	4.8	0.5	0.6
1/2 to 7/8-Inch non-ferrous	930-1000	1000	10	13.6	3	4
1/2 to 3/4-Inch ferrous						
1/2 to 1-Inch non-ferrous	930-7500	750	12	16.3	3	4
1/2 to 3/4-Inch ferrous						
1/2- to 1½-Inch non-ferrous	930-4500	450	18	24.4	3	4
1/2 to 1-Inch ferrous						

ACCESSORIES	Model 952	Model 930
8-Foot Hose	50371	50007
Filter Lubricator Unit	8596	8596
Spare Rotor Blades	952-1819X (Set of 6)	51139 (Set of 4)
1 Gallon of WilsoLube	9047	9047
1 Gallon of Expander Lube	28115-0009	28115-0009
3/8-Inch Square Flexible Mandrel Drive	-	71385
Other Mandrel Drives Available	Consult Factory	Consult Factory

Electronic Tube Expansion

Electric Tube Rollers: 1/2 to 3-Inch OD Tubes



Series 22488 with CB Expander

Applications

- Rolling ferrous and non-ferrous tubes in boilers, heat exchangers, and other pressure vessels.

Features

- Wilson Electric Tube Rollers** are durable, reliable, and easy to use.
- Both the **41238** and **22488** include dead handles for added leverage.
- On/Off and reverse switches are conveniently located on the fixed handle.
- Exceeding their stall points will not damage these rugged machines.
- Wilson offers a complete line for various tube sizes and voltages. See chart below for selection.



The **76189** Electric Rolling Motor rolls tubes to 1½-inch Outer Diameter.



The **41238** Electric Rolling Motor rolls tubes to 2½-inch Outer Diameter.



The **22488** Electric Rolling Motor rolls tubes up to 3-inch Outer Diameter.

Tube OD Inches (mm)	Voltage and Frequency	Motor Part No.	Free Speed rpm	Amps/Wattage	Drive Spindle	Weight	Overall Length Inches (mm)	Service Manual
½ to 1 ½ (12.7-38.1)	110 Volts 60 Hz	76189-0000	500	7 Amps	1/2 Round	6.8 lbs. (3.1 Kg)	14 ¾ (375)	SM-123
	220 Volts 50 Hz	76189-0220						
1 to 2 ½ (25.4-63.5)	110 Volts 60 Hz	41238-0000	250	10 Amps 900 Watts	#3 Morse Taper Socket	19 lbs. (8.6 Kg)	18 ½ (470)	SM-133
	220 Volts 50 Hz	22487-0220				22.7 lbs. (10.3 Kg)	15 ¾ (400)	SM-188
2 to 3 (50.8-76.2)	110 Volts 60 Hz	22488-0000	100	900 Watts	#4 Morse Taper Socket	23 ½ lbs. (10.6 Kg)	16 ¾ (420)	SM-188
	220 Volts 50 Hz	22488-0220						

Connectors	Part No.
For 76189:	
3/8-Inch (9.5mm) Quick Connector	41337-0000
1/2-Inch (12.7mm) Quick Connector	41723-0000
For 41238 & 22487:	
1/2-Inch (12.7mm) Square Socket x 3 M.T.	41237-0000
3/4-Inch (19.1mm) Square Socket x 3 M.T.	20211-0000
1-Inch (25.4mm) Square Socket x 3 M.T.	20497-0000
For 22488:	
3/4-Inch (19.1mm) Square Socket x 4 M.T.	20212-0000
1-Inch (25.4mm) Square Socket x 4 M.T.	20213-0000

Accessories	Part No.
For 76189:	
On/Off, Forward/Reverse Switch	76189-0105
Set of Motor Brushes (<i>must order 2 sets</i>)	76189-0125
For 41238:	
On/Off, Forward/Reverse Switch	41238-0105
Set of Motor Brushes (<i>must order 2 sets</i>)	41238-0125
For 22487 & 22488:	
Forward/Reverse Switch	22488-8691
On/Off Switch	22488-0080
Set of Motor Brushes (<i>must order 2 sets</i>)	22488-0008

Electronic Torque-Controlled Tube Rollers: 1/2 to 3-Inch OD Tubes



Applications

- Rolling ferrous and non-ferrous tubes in boilers, heat exchangers, condensers, and other pressure vessels with accurate and repeatable torque control.

Features

- Wilson Electric Torque-Controlled Tube Rollers** are durable, reliable, and easy to use. In most cases, you are ready to roll tubes in less than 3 minutes.
- The torque control box is adjustable for expanding torque and will automatically reverse the motor when selected torque is reached.
- Control boxes are available in 110V or 220V single-phase supply choices. Motors are on/off reversing and equipped with dead handle that gives operator added leverage and maneuverability.
- The system consists of a range of electric motors and control boxes. See chart below for selection.



Control Box With Motor



Control Box Panel

Read-Out Screen

Motor Connector

On/Off Switch



76189



41238



22488

Tube OD Inches (mm)	Voltage and Frequency	Motor Part No.	Free Speed rpm	Amps/Wattage	Control Box Part No.	Control Box Amps
½ to 1 ½ (12.7-38.1)	110 Volts 60 Hz	76189-5000	500	7 Amps	76190-5000	20
	220 Volts 50 Hz	76189-5220			76190-5220	
1 to 2 ½ (25.4-63.5)	110 Volts 60 Hz	41238-5000	250	10 Amps 900 Watts	76190-5000	
	220 Volts 50 Hz	22487-5220			76190-5220	
2 to 3 (50.8-76.2)	110 Volts 60 Hz	22488-5000	100	900 Watts	76190-5000	
	220 Volts 50 Hz	22488-5220			76190-5220	

Control Box Service Manual: SM-281

Wils-Tronic™ Tube Roller

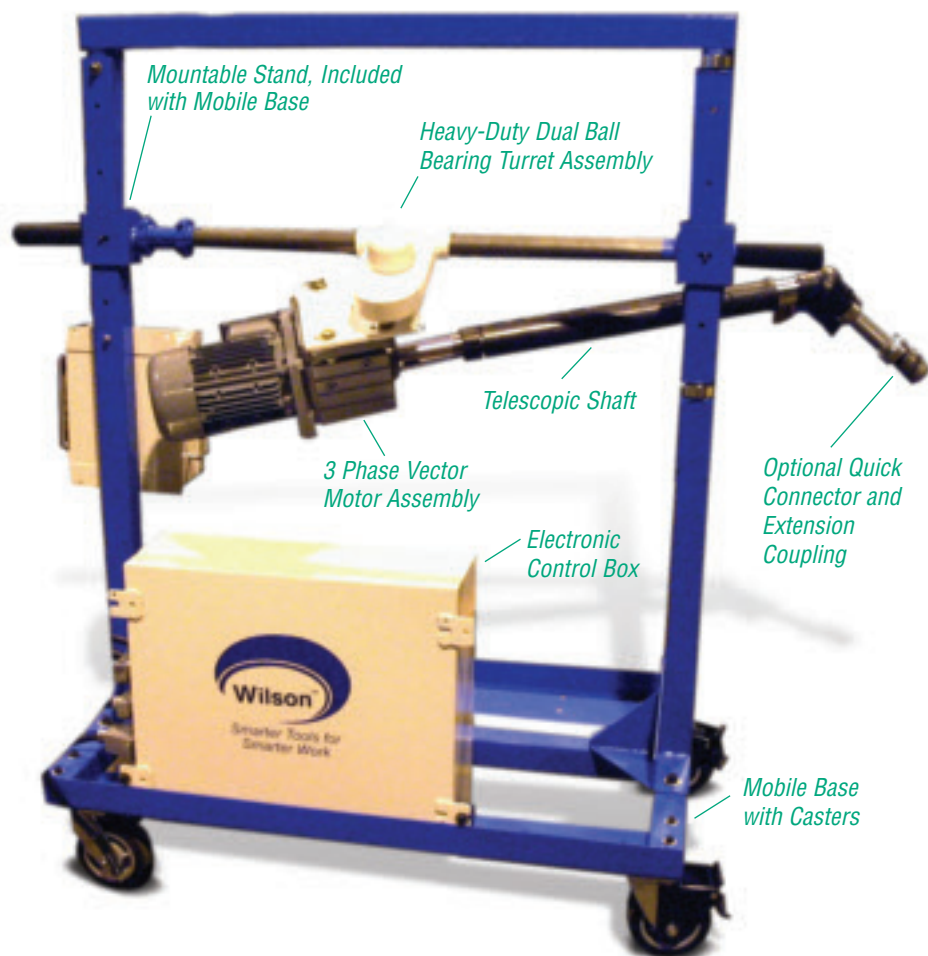
The most important feature of the **Wils-Tronic™** is its ability to maintain constant speed during the entire rolling process, even at various torque settings, making it faster and more efficient than conventional tube rollers. It also runs more quietly than any other tool on the market.

Features

- Two Modes of Operation (Manual and Automatic)
- Constant rpm at Various Torque Settings
- Auto Cycle for Continuous Rolling of Multiple Tubes
- Fully Programmable Keypad
- Security Lockout by Password
- Very Low Noise Level
- Telescopic Shaft Eliminates Operator Fatigue
- Flexible Tool That Allows for a Variety of Tools, Including Expanders, Cutters, and Reamers.

Specifications

Power Requirements:	220V 3 Phase 50 or 60 Hz - or - 440V 3 Phase 50 or 60 Hz
Speed:	Up to 1,400 rpm
Torque (Programmable):	1 to 300 ft. lbs.
Weight:	350 lb.
Work Envelope Dimensions:	Up to 10 ft. x 10 ft. with Standard Cart

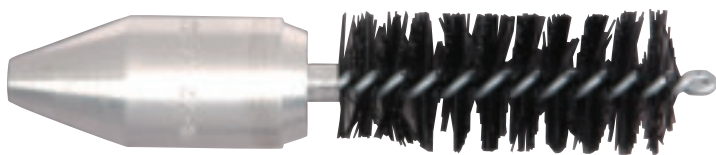


Patent Pending

How to Order

Wils-Tronic™ Model	Low Torque	Mid Torque	High Torque
Technical Data			
Tube Capacity	1/2 to 1½-Inch Tubes	3/4 to 3-Inch Tubes	Up to 3-Inch Tubes
rpm	0-1400 rpm	0-400 rpm	0-400 rpm
Torque Ranges	1-30 Ft-lbs.	15-120 Ft-lbs.	80-300 Ft-lbs.
Wils-Tronic™ Kits			
Consisting of: Base Control, Foot Switch	3ø 230V, 60 Hz	46000-0000	46500-0000
Power Cable, Motor Mount, Accessory Tool Kit	3ø 230V, 50 Hz	46005-0000	47005-0000
Telescopic Shaft, Shipping Crate, and Manual	3ø 440V, 60 Hz	46040-0000	47040-0000
	3ø 440V, 50 Hz	46045-0000	47045-0000
Accessories			
Mobile Stand	46000-5400		
Stationary Stand	46000-5010		
3/8-Inch Quick Connector	46000-4200	—	
1/2-Inch Quick Connector	46000-4250	21489-0500	
3/4-Inch Quick Connector		21489-0750	
3/4-Inch Extension Coupling		46500-4400	
1-Inch Extension Coupling		46500-4500	
1/2-Inch Jacobs Chuck	46000-4600	—	
#2MT Adaptor		46500-6000	
Telescopic Shaft	46000-4000	46500-4000	
Service Manual	SM-293	SM-287	SM-296

Aluminum Tube Guides



Features

- Protects tube end during installation
- Ensures accurate alignment of tube through baffle
- Replacement Nylon Brush available
- Wide range of Gauge

OD Inches (mm)	GA	Part No.
3/8 (9.5)	16-19	44141
	20-24	44142
1/2 (12.7)	14-17	44143
	18-22	44144
5/8 (15.9)	14-17	44145
	18-22	44146
3/4 (19.1)	14-17	44147
	18-22	44148
7/8 (22.2)	14-17	44149
	18-22	44150
1 (25.4)	14-17	44151
	18-22	44152
1 1/4 (31.8)	14-17	44153
	18-22	44154

* Guide are 10 per package.

* Other sizes and materials available 25 minimum.

Carbide Burs



OD Inches (mm)	Part No.	Features
0.640 (16.3)	9840	Left Hand Spiral, Right Hand Cut, 1/2-Inch Diameter Shank
0.765 (19.4)	9841	
0.890 (22.6)	9842	
1.015 (25.8)	9843	

Features

- .005 larger than tube hole within TEMA specifications

Tubesheet Hole Reamer



OD Inches (mm)	Part No.	Reamer Diameter Inches (mm)	Morse Taper
3/8 (9.5)	22250	.380 (9.7)	1
1/2 (12.7)	20333	.505 (12.8)	
5/8 (15.9)	20288	.632 (16.1)	2
3/4 (19.1)	20289	.758 (19.3)	
7/8 (22.2)	20290	.883 (22.4)	3
1 (25.4)	20291	1.010 (25.7)	
1 1/4 (28.6)	40513	1.135 (28.8)	4
1 1/2 (31.8)	21358	1.260 (32.0)	

Features

- High-Speed Tool Steel 8 Flute
- Superior performance compared to adjustable reamer

Grooving Tools



Features

- Grooving of tubesheets for heat exchangers, condensers, or boiler drums
- Adds strength to tube-to-tube seat joint
- Adjustment for depth of groove and position of tubesheet

1/8 1/4 1/8



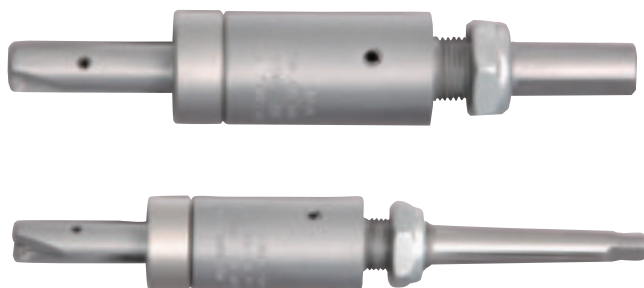
Standard bits are 1/8 x 1/4 x 1/8. Other bit configurations available, consult factory.

Tube Hole <i>Inches (mm)</i>	Grooving Tool Part No.	Tool Bit Part No.	Morse Taper Drive	Weight (Approx) <i>lbs. (Kg)</i>
5/8 (15.9)	74358	74366	+ #3	3 (1.4)
3/4 (19.1)	74359	74367		3 3/4 (1.5)
7/8 (22.2)	74360			
1 (25.4)	74361			
1 1/4 (31.8)	74362		#4	3 1/2 (1.6)
1 1/2 (38.1)	74363			6 1/2 (2.9)
2 (50.8)	74364		#5	7 1/2 (3.4)
2 1/2 (63.5)	74700	10 1/2 (4.8)		
3 (76.2)	74704	19 (8.6)		
				26 (11.8)

+ Available with 1/2-Inch Diameter Straight Shank



Push-Type Tube Cutters



Features

- For cutting and removal of ferrous or non-ferrous tubes
- Cuts tubes in seconds
- Attaches to electric or pneumatic drills
- Push to cut
- Pull to retract bit

To order:

Assembly Part No. **2 5 0 0 4 - 0 5 0 2**

"0" for uncoated bit
"9" for coated bit

Reach

Example:

Part no. for a 5/8" x 16" Gauge tube in a 2-inch tubesheet with a 1/2-inch Round Chucking Shank is 25004-0502

"5" for 1/2-Inch Round Chucking Shank
"7" for 3/4-Inch Round Chucking Shank
"0" for Morse Taper Shank



The Tube Trimmer attaches to the Push-Type Cutter

Applications

- Used where there is considerable projection to be cut off
- Available for 2 to 5-inch projection
- To order, specify Outer Diameter and projection

Tube OD <i>Inches (mm)</i>	Tube <i>GA</i>	Tubesheet Thickness				MT Shank	Chucking Shank	Set of Bits and Pins Part No.	Drive Motor
		1 - 1½-Inch	1½- 2½-Inch	2 - 4½-Inch	2½- 4½-Inch				
1/2 (12.7)	16-17	25000-0001	—	—	—	1	1/2 (12.7)	25212	932-5000 Air Motor 500 rpm
	18-19	25001-0001	—	—	—				
	20-24	25200-0001	—	—	—				
5/8 (15.9)	14	25002-0001	25002-0002	—	—			25183	
	15	25003-0001	25003-0002	—	—				
	16-17	25004-0001	25004-0002	—	—				
	18-19	25005-0001	25005-0002	—	—				
	20-24	25006-0001	—	26006-0004	—				
3/4 (19.1)	14	25007-0001	—	25007-0004	—			25186	
	15	25008-0001	—	25008-0004	—				
	16-17	25009-0001	—	25009-0004	—				
	18-19	25010-0001	—	25010-0004	—				
	20-24	25201-0001	—	25201-0004	—				
7/8 (22.2)	14-15	25014-0001	—	25014-0004	—	2	1/2 (12.7)	25194	932-3000 Air Motor 300 rpm
	16-17	25015-0001	—	25015-0004	—				
	18-19	25017-0001	—	25017-0004	—				
	20-22	25018-0001	—	25018-0004	—				
	14	25019-0001	—	—	—				
1 (25.4)	15	25020-0001	—	—	—	25199			
	16-17	25021-0001	—	—	—				
	18-22	25022-0001	—	—	—				
	14	25028-0001	—	25028-0004	—				
1¼ (31.8)	15	25029-0001	—	25029-0004	—	25206			
	16-17	25030-0001	—	25030-0004	—				
	18-20	25031-0001	—	25031-0004	—				
	14	25037-0001	—	25037-0004	—				
1½ (38.1)	15	25038-0001	—	25038-0004	—	3	3/4 (19.1)	25217	41239 Electric Drive 110V 250 rpm
	16-17	25039-0001	—	25039-0004	—				
	18-20	25040-0001	—	25040-0004	—				
	14	—	25239-0001	—	25239-0003				
2 (50.8)	15	—	25240-0001	—	25240-0003	4	25223		
	16-20	—	25241-0001	—	25241-0003				

One-Revolution Tube Cutters



Applications

- For use in heat exchangers
- Cuts up to 7-inch thick tubesheets
- No special drive required, uses either a ratchet or hand wrench
- Easily replaceable cutter

Tube OD <i>Inches (mm)</i>		Tube GA	Tube Cutter Assembly	Hex Drive <i>Inches</i>	Replacement Cutter Bits
1/2	(12.7)	18-19	47500-0019	5/16	47500-0005
		20-22	47500-0022		47500-0006
5/8	(15.9)	15-16	47625-0016	3/8	47625-0004
		17-18	47625-0018		47625-0005
		19-20	47625-0020		
		21-22	47625-0022		
3/4	(19.1)	14-15	47750-0015	1/2	47750-0005
		16	47750-0016		
		17-18	47750-0018		47875-0005
		19-20	47750-0020		
7/8	(22.2)	14-15	47875-0015	5/8	47875-0005
		16-17	47875-0017		
		18	47875-0018		47100-0005
		19-20	47875-0020		
1	(25.4)	15	47100-0015	3/4	47100-0005
		16-17	47100-0017		
		18-20	47100-0020		
		21-22	47100-0022		
1¼	(31.8)	12	47125-0012	1	47150-005
		13-14	47125-0014		
		15-16	47125-0016		
		17-19	47125-0019		
1½	(38.1)	12-13	47150-0013	1	47150-005
		14-15	47150-0015		
		16-17	47150-0017		
		18-19	47150-0019		

Air Motors for Maintenance and Erection Tools #932



Model shown 932-5000
with accessories
Jacobs Chuck 3/8-Inch
Part No. 52130

Features

- Cutting ferrous and non-ferrous tubes in heat exchangers and other pressure vehicles
- 1/4 to 1 1/4-Inch Outer Diameter Tubes
- For Use with Tube Cutters, Facers, Reamers, Wall-Reducing Tools, Radius Cutters, and Packing Removal Tubes

Specifications

• Model 932:

Weight: Drive: 3 lbs. (1.4 Kg)
Air Consumption: 28 SCFM @ 90 psi
Drive: MT Connector**
Jacobs Chuck

Kit Includes:

- Drive Motor
- 52684 #2 MT Drive or 52685 #1 MT Drive
- Dead Handle
- Service Manual SM-80

Tube Capacities	Drive Motor	Free Speed rpm
Non-Ferrous up to 1-Inch OD	932-8500	850
Steel Tube OD's & Sheet Hole Diameters up to 3/4-Inch	932-5000	500
Steel & S.S. Tube OD's & Sheet Hole Diameters up to 1-Inch	932-3000	300
Steel & S.S. Tube OD's & Sheet Hole Diameters up to 1 1/4-Inch	932-1250	125

Accessories	Part No.
12-Foot Hose	24360-0012
Filter Lubricator Unit	8596
Spare Rotor Blades	51139 (Set of 4)
1 Gallon of WilsoLube	9047
3/8-Inch Jacobs Chuck	52130
1/2-Inch Jacobs Chuck	52625
**Other Mandrel Drives Available	Consult Factory

Wilson Power Puller WPP-1500

Electric Hydraulic Tube Puller-Spear Type 1/2 to 1½-Inch Tubes



Features

- Heavy-duty, double-acting hydraulic cylinder with hydraulic return
- Safety relief valve on cylinder protects against overpressurizing
- Quick-acting, cylinder-mounted safety lock provides positive engagement with notched spear extension
- All hose connections to cylinder and pump have quick-disconnect couplings



New: Pneumatic Vise to remove spear from tube. See page 27.

WPP-1500 Kit for 1/2 to 1-Inch OD Tubes		Part No.
Consists of		
Hydraulic Cylinder 7-Inch Stroke		75658
Notched Extension		74510
Electric/Hydraulic Pump Set	115 Volt/60 Hz	74825
Includes:		
1 Gallon of Hydraulic Oil No. 74478-0041		
2 12-Foot Hydraulic Hoses No. 74490		
Assembled with Quick-Acting Hose Couplings		
Mobile Cart		75657
Service Manual		SM-251

Other Available Kits	Kit No.
220 Volt/50 Hz	WPP-1501 Kit
Cylinder 3-Inch Stroke, 30-Ton	WPP-1503 Kit
Pneumatic/Hydraulic Pump	APP-1501 Kit

Specifications

- Capacity:
- 30-ton capacity cylinder covers tube Outer Diameter range from 1/2 to 1½-inch tube sizes
 - 7-inch long stroke cylinder allows for 14-inch total pull when using notched extension
 - Maximum Operating Pressure: 10,000 psi
 - 1½ H.P. Motor with 115 Volt 60 Hz AC Power Input
 - 220 Volt motor available upon request

Optional Equipment for 1¼-Inch Outer Diameter and 1½-Inch Outer Diameter Tubes:

Adapter Kit No. 74593-0000 consists of:

1 - Chair Part No. 74593-0001

1 - Adapter Extension Part No. 74593-0002



Tube Pulling Spears* Order By Tube Size and Gauge							
Tube GA	1/2-Inch Tube Spear Part No.	5/8-Inch Tube Spear Part No.	3/4-Inch Tube Spear Part No.	7/8-Inch Tube Spear Part No.	1-Inch Tube Spear Part No.	1¼-Inch Tube Spear Part No.	1½-Inch Tube Spear Part No.
7	-	-	-	-	-	-	-
9	-	-	-	-	74192-0014	-	-
10	-	-	-	-	74192-0016	-	74189-0010
11	-	-	74194-0016	74193-0016	74191-0011	74190-0011	74189-0011
12	-	74195-0018	74194-0018	74193-0018	74191-0012	74190-0012	74189-0012
13	-	74195-0020	74194-0020	74193-0020	74191-0013	74190-0013	74189-0013
14	-	74194-0014	74193-0014	74192-0014	74191-0014	74190-0014	74189-0014
16	74195-0016	74194-0016	74193-0016	74192-0016	74191-0014	74190-0016	-
18	74195-0018	74194-0018	74193-0018	74191-0012	74191-0018	-	-
20	74195-0020	74194-0020	74193-0020	74191-0012	74191-0018	-	-

*For Spears from 1/2 to 1-Inch, End Thread is Male 3/4-Inch - 10

For 1¼ and 1½-Inch Spears, End Thread is Female 3/4-Inch - 10

Hydraulic Tube Extractor — Collet and Spear Type Pulls 5/8 to 1¼-Inch OD Tubes

Applications

- Quickly and efficiently removes tubes from heat exchangers, condensers, and other pressure vessels

Features

- Uses a heavy-duty, single-action hydraulic cylinder with spring return
- Quick-disconnect couplings and a heavy-duty, thermal-protected motor
- 1½ HP electric-hydraulic power unit that delivers 55CFM of oil at 10,000 psi with 115 Volt
- Also available in 220V/50-60 Hz versions
- The system has a 10-foot hose with spring guards and quick coupler fittings for added maneuverability
- An external pressure relief valve and gauge monitor the system's pressure

Benefits

- Many times faster than manual tube pulling
- Trigger operation is fast and efficient
- Spring return retracts gripper, further improving productivity
- Minimal training or experience required



How To Order

Simply add the tube Outer Diameter fractional to the kit number

Hydraulic Tube Extractor No. 75700-____-Kit	Part No.
Consists of	
Extractor Gun (5/8 to 1-Inch OD Tubes)	75700-7001
Power Hose and On/Off Assembly	75700-7210
Hydraulic Power Unit (110V-60 Hz)	75700-7260
Gripper Set (see chart below)	75700-0XXX
Service Manual	SM-250

Hydraulic Power Unit (220V-50/60 Hz)

75700-7262

To order 220V Kit, add "220" before the word "Kit"

Item	Part No.	Item	Part No.
Spear 0.375 - 0.500	75700-7401	Spear Driver	75700-7331
Spear 0.500 - 0.625	75700-7402	Spear Gripper	75700-7320
Spear 0.625 - 0.750	75700-7403	Yoke 1 - 1½ - 2-Inch	75700-7290
Spear 0.750 - 0.875	75700-7404	Standoff/Depth Stop	75700-7354
Spear 0.875 - 1.000	75700-7405	Large Front Housing	75700-7351
Spear 1.000 - 1.125	75700-7411	Large Mandrel	75700-7183
Spear 1.125 - 1.125	75700-7412		

Spear pulling kit for 5/8 to 3/4-inch tubes #75700-6275 includes large front housing, large mandrel, spear gripper, spear driver, standoff, yoke, and spears (#75700-7402 and -7403).

Tube OD Inches (mm)	Tube GA	Gripper Set For Kit No.	Each Gripper Set Includes These Components:		
			Gripper	Mandrel	Stop
5/8 (15.9)	16-19	75700-0062 (5/8-Inch Kit)	75700-7055S	75700-7182	75700-7065
	16-19		75700-7055M		
	18-22		75700-7055L		
3/4 (19.1)	16-18	75700-0075 (3/4-Inch Kit)	75700-7056S	75700-7183	75700-7066
	18-20		75700-7056M		
	20-22		75700-7056L		
7/8 (22.2)	16-18	75700-0087 (7/8-Inch Kit)	75700-7057S	75700-7183	75700-7067
	18-20		75700-7057M		
	20-22		75700-7057L		
1 (25.4)	16-18	75700-0100 (1-Inch Kit)	75700-7058S	75700-7183	75700-7068
	18-20		75700-7058M		
	20-22		75700-7058L		
1¼ (31.8)	16-19	75700-0125 (1¼-Inch Kit)	75700-7355S	75700-7183	75700-7353
	19-21		75700-7355M		
	18-22		75700-7355L		

S = Small M = Medium L = Large

Extractor can be converted to spear-type pulling for 14 Gauge and heavier.

Contact us with your specific requirements.

Tube End Facing Tools

Fixed Type: 1/4 to 9/16-Inch OD Tubes

Features

- Adjustable collar provides projection control
- Four-flute high-speed steel
- Simple replacement of pilots



Tube OD		Tube GA	Assembly With Collar	Spare Cutter Bits	Shank Dia.
Inches	(mm)				
1/4	(6.4)	18-25	44070-X0GA	44070-0003	1/4-Inch
3/8	(9.5)	18-25	44071-X0GA	44071-0003	
1/2	(12.7)	16-25	44073-X0GA	44073-0003	

GA = Tube Gauge

X: 0 = Regular Bit; 9 = Coated Bit

Insert Type: 5/8 to 2-Inch OD Tubes

Features

- Adjustable collar provides projection control
- Cutter bits can be easily replaced, lengthening the life of the product
- Delrin Pilots are available for 5/8-inch and larger tools for non-scoring applications



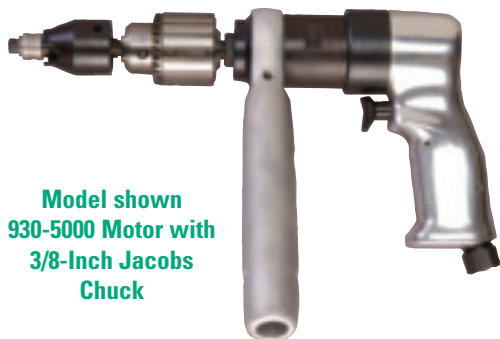
Tube OD		Tube GA	Assembly With Collar	Spare Cutter Bits	Shank Dia.
Inches	(mm)				
5/8	(15.9)	15-25	44075-X0GA	44075-X001	3/8-Inch
3/4	(19.1)	13-25	44076-X0GA	44076-X001	
7/8	(22.2)	10-25	44077-X0GA	44077-X001	
1	(25.4)	9-25	44078-X0GA	44078-X001	1/2-Inch
1 1/8	(28.6)	15-22	44079-X0GA	44079-X001	
1 1/4	(31.8)	9-14	44080-X0GA	44080-X001	
1 1/2	(38.1)	9-12	44081-X0GA	44081-X001	
1 3/4	(44.5)	9-13	44082-X0GA	44082-X001	
2	(50.8)	7-12	44083-X0GA	44083-X001	

GA = Tube Gauge

X: 0 = Regular Bit; 9 = Coated Bit

Delrin Pilots are available upon request

Model shown
930-5000 Motor with
3/8-Inch Jacobs
Chuck



TUBE WALL THICKNESS OF WALL IN BIRMINGHAM WIRE GAUGE

GA	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
Inch	.014	.016	.018	.020	.022	.025	.028	.032	.035	.042	.049	.058	.065	.072	.083	.095	.109	.120	.134	.148	.165	.180	.203
mm	.4	.4	.5	.5	.6	.6	.7	.8	.9	1.1	1.2	1.5	1.7	1.8	2.1	2.4	2.8	3.0	3.4	3.8	4.2	4.6	5.2

Flat and Radius Type Facer: 5/8 - 2-Inch

- Both Flat and Radius Tools trim tubes to consistent projection

Features

- Adjustable collar provides projection control
- Removable taper or chucking shank provides drive flexibility
- Cutters can be easily resharpended



Flat-Facing Tube End Facing Tool
(shown with chucking shank and adjustable collar installed)



NOTE:
Shown without
collar for clarity

OD Inches	Tube (mm)	Wall GA	Flat Facer Assembly Part No.	Spare Cutter Part No.	Radius Facer Assembly Part No.	Spare Cutter Part No.
5/8	(15.9)	13-14	21874-xxGA	21874	21791-xxGA	21791
		15-16			21792-xxGA	21792
		17-18			21793-xxGA	21793
		19-20			21794-xxGA	21794
		21-25			-	-
3/4	(19.1)	13-14	21562-xxGA	21562	21795-xxGA	21795
		15-16			21796-xxGA	21796
		17-18			21797-xxGA	21797
		19-20			21798-xxGA	21798
		21-25			-	-
7/8	(22.2)	11-12	21563-xxGA	21563	21799-xxGA	21799
		13-14			21800-xxGA	21800
		15-16			21801-xxGA	21801
		17-18			21802-xxGA	21802
		19-20			21803-xxGA	21803
1	(25.4)	21-25			-	-
		9-10	21564-xxGA	21564	21804-xxGA	21804
		11-12			21805-xxGA	21805
		13-14			21806-xxGA	21806
		15-16			21807-xxGA	21807
1%	(28.6)	17-18			21808-xxGA	21808
		19-25			-	-
		15-16	21565-xxGA	21565	40356-xxGA	40356
		17-18			40357-xxGA	40357
1 1/4	(31.8)	20-22			40358-xxGA	40358
		23-25			-	-
		9-10	22287-xxGA	22287	22336-xxGA	22336
1%	(34.9)	11-12			22337-xxGA	22337
		13-14			22338-xxGA	22338
		9-10	22288-xxGA	22288	22339-xxGA	22339
1 1/2	(38.1)	11-12			22340-xxGA	22340
		13-14			22341-xxGA	22341
		9-10	22289-xxGA	22289	22342-xxGA	22342
2	(50.8)	11-12			22343-xxGA	22343
		7-8			22344-xxGA	22344
		9-10	22290-xxGA	22290	22345-xxGA	22345
		11-12			22346-xxGA	22346

To order:

GA= specify the tube Gauge when ordering
xx- std #2 MT shank=00, 1/2-inch chucking shank=50
2-inch size has #3 MT standard

Tube Wall Reducing Tools

Features

- Relieves tube joint prior to cutting
- Self-center design prevents damage to sheet
- Tubes do not need to be cleaned prior to use

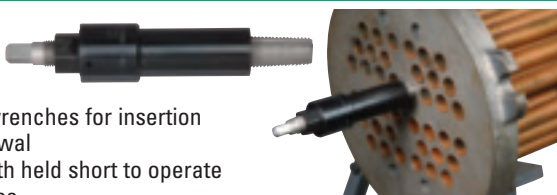


Tube OD Inches (mm)	Tube GA	Part No.	Shank	Major Dia.
1/4 (6.4)	18-24	22088-00xx	1/4-Inch Rd.	.238
5/16 (7.9)	18-24	22089-00xx	5/16-Inch Rd.	.300
3/8 (9.5)	16-24	22090-00xx	3/8-Inch Rd.	.359
1/2 (12.7)	16-22	22091-00xx		.484
5/8 (15.9)	12-22	22092-00xx	#2 MT	.609
3/4 (19.1)	12-22	22093-00xx		.734
7/8 (22.2)	12-22	22094-00xx		.859
1 (25.4)	10-22	22095-00xx	#3 MT	.984
1 1/8 (28.6)	16-22	22096-00xx		1.109
1 1/4 (31.8)	10-20	22097-00xx		1.234
1 1/2 (38.1)	10-15	22098-00xx	#4 MT	1.484

Manual Tube Puller

Features

- Easy to use
- Only hand wrenches for insertion and withdrawal
- Overall length held short to operate in tight places



Tube OD Inches (mm)	Tube GA	Part No.	Replacement Spear
1/4 (6.4)	18-19	74811-1819	74811-0001
	20-21	74811-2021	74811-0002
3/8 (9.5)	18-19	74812-1819	74812-0001
	20-21	74812-2021	74812-0002
1/2 (12.7)	16-25	74834	74834-0001
5/8 (15.9)	16-25	74535	74535-0001
3/4 (19.1)	16-25	74536	74536-0001
7/8 (22.2)	16-25	74537	74537-0001
1 (25.4)	16-25	74538	74538-0001
1 1/4 (31.8)	16-25	74732	74732-0001

Tubesheet Hole Brushes

Features

- Easy to use
- Can clean thick tubesheets
- Can be dipped in water or solvent for additional cleaning action

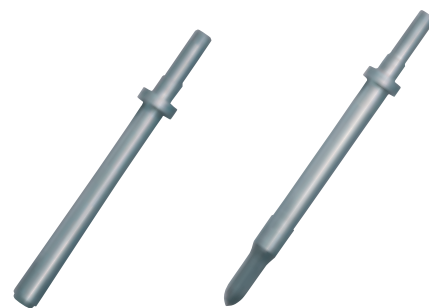


Tube OD Inches (mm)	Nylon (6-Inch) Part No.	Stainless Steel	
		Length	Part No.
5/8 (15.9)	41040	6	41045-0006
		12	41045-0012
3/4 (19.1)	41041	6	41046-0006
		12	41046-0012
7/8 (22.2)	41042	6	41047-0006
		12	41047-0012
1 (25.4)	41043	6	41048-0006
		12	41048-0012
1 1/4 (28.6)	41044	6	41049-0006
		12	41049-0012

Tube Knockout/Collapsing Tools

Features

- Minimizes tube removal costs
- Specifically designed as a companion to the Tube Wall Reducing Tool



Tube OD		Tube	K.O. Tool	Shank	OAL	Collapsing	OAL
Inches	(mm)	GA	Part No.			Tool No.	
1/4	(6.4)	18-28	22111-00XX	.560/.680 (Round)	7	—	—
5/16	(7.9)	18-28	22112-00XX			—	—
3/8	(9.5)	16-28	21390-00XX			—	—
1/2	(12.7)	14-22	20956-00XX		9	21909	11½
5/8	(15.9)	12-22	20957-00XX	21910			
3/4	(19.1)	12-22	20958-00XX	10		21911	11½
7/8	(22.2)	12-22	20959-00XX			21912	
1	(25.4)	10-22	20960-00XX		10	21913	11½
1⅛	(28.6)	16-22	40171-00XX			40514	
1¼	(31.8)	10-22	21391-00XX	21914		12	
1½	(38.1)	10-22	40563-00XX	21915			
2	(50.8)	—	—	.680 (Round)	—	74010-0800	12½

Extra-Length Tube Knockout Tools



Tube OD Inches (mm)	Tube GA	K.O. Tool Part No.	OAL	K.O. Tool Part No.	OAL
5/8 (15.9)	8-16	20732-00xx	8	20732-14xx	14
3/4 (19.1)	8-16	20733-00xx		20733-14xx	
7/8 (22.2)	8-16	20734-00xx		20734-14xx	
1 (25.4)	8-16	20735-00xx		20735-14xx	
1 1/4 (31.8)	8-16	20736-00xx		20736-14xx	

Tube Knockout Tools For Use with No. 80 Boyer Gun



Tube OD Inches (mm)	K.O. Tool Part No.	OAL
1 (25.4)	73750	11
1 1/4 (31.8)	72626	8
1 1/2 (38.1)	72806	10
2 (50.8)	72230	
	72940	12

Special Application Products

Long-Reach Expanders

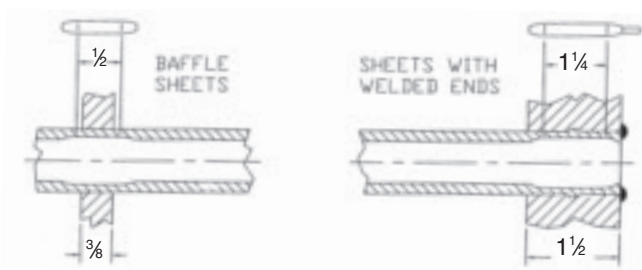


Wilson Long-Reach Expanders expand tubes at points far back from the tubesheet, such as the point at which it passes through a baffle sheet.

- Tube Outer Diameter: 5/8 to 4½-Inch, 8 to 22 Gauge
- Roll Length: 1½ or 2¼-Inch and Relieved
- Extended Reach: 6, 12, 18, 24, 30, 36, or 60-Inch

Relieved Rolls

Rolling Tubes with Welded Ends or Expanding Tubes at Baffle Sheets



Wilson Relieved Rolls adapt to any **Wilson 41, 44, or 47 Series Expander** to roll tubes after they have been welded or to roll tubes at the point at which they pass through a baffle sheet.

- For 1/2 to 2½-inch Outer Diameter tubes
- Relieved Rolls are installed in minutes and work with any **Wilson 41, 44, 47, 72, or 73 Series Expander**
- To order set of Relieved Rolls, simply specify Expander Assembly Part No. and effective roll length

Pipe Sizing Expanders

True Up or Bring Pipe or Tube Ends to Round



Wilson Pipe Sizing Expanders bring pipe or tube ends to a precise diameter to prepare them for soldering or brazing into sil-braz and similar pipe fittings. Very close manufacturing tolerances ensure that rolls expand in a parallel manner.

- For 0.435 to 12-Inch Inner Diameter pipe and tubes
- When ordering, specify tube Outer Diameter and Inner Diameter, tube metal, and approximate depth of rolling

Captive Mandrel Expanders

Tube Expansion with Limited Mandrel Travel



Wilson Captive Mandrel Tube Expanders enable tubes to be rolled where mandrel travel is limited because of restrictions in the tube Inner Diameter or when the tube bend is very close to the rolling area.

- For 3/8 to 2½-Inch Outer Diameter tubes
- To order a Captive Mandrel Expander, provide us with the details of your specific application (tube Outer Diameter and Gauge, tubesheet thickness, and maximum mandrel travel)

VLD Vacuum Leak Detector

Pinpoint Leaky Tubes - 1/4 to 3-Inch OD



Applications

The Vacuum Leak Detector (VLD) is a simple test instrument used by manufacturers and users of condensers, heat exchangers, and other tubular apparatus to identify leaky tubes. One man does the job. He seals the far end of each tube with a snap-type tube plug, then he presses the rubber-coated nozzle into the near end of the tube and depresses the trigger. Compressed air flows through a venturi chamber to produce a vacuum in the tested tube. When this vacuum reaches a satisfactory level, he releases the trigger. A steady gauge reading indicates a good tube. A falling vacuum indicates a leaky tube. Using a 90 psi dry clean air, a typical tube (1-inch Outer Diameter x 20 Gauge and 20 feet long) can be tested in 6 to 8 seconds. Tool weighs 2½ lbs. and is equipped with a muffler, so it operates quietly even in confined areas.



Kit No. 9836 for 5/8 to 1½-Inch OD Tubes	
Consists of	Part No.
Vacuum Leak Detector	42823
Assembled with Nozzle	41460-1003
Hose Assembly 12-Foot	24360-0012
T-Handle Tube Plug	42834-1003
Carrying Case	42837
Service Manual	SM-158

Accessory Parts for VLD Tool



Tube Plug Snap Type		
ID		Part No.
Inches	(mm)	
3/8	(9.5)	41482
7/16	(11.1)	41483
1/2	(12.7)	41484
9/16	(14.3)	41485
5/8	(15.9)	41486
11/16	(17.5)	41487
3/4	(19.1)	41488
13/16	(20.6)	41489
7/8	(22.2)	41490
15/16	(23.8)	41491
31/32	(24.6)	41492
1	(25.4)	41493
1½	(28.6)	41494
1½	(31.8)	41495
1½	(34.9)	41496
1½	(38.1)	41497
1½	(41.3)	41498
1½	(44.5)	41499
1½	(47.6)	41500
2	(50.8)	41501



Additional Nozzles* Available	Part No.
Nozzle for 1/4 to 3/4-Inch OD Tubes	41460-1002
Nozzle for 5/8 to 1½-Inch OD Tubes	41460-1003
Nozzle for 1½ to 2-Inch OD Tubes	41460-1004
Nozzle for 1½ to 3-Inch OD Tubes	41460-1005

*To be ordered in pairs (2) when T-handle is used.



Nozzle Extensions:	Part No.
For 5/8 to 1½-Inch Tubes 12-Inch Lg	41461-3012
For 1½ to 2-Inch Tubes 12-Inch Lg	41461-0012
For 1½ to 2-Inch Tubes 24-Inch Lg	41461-0024

One-Piece Tube Plugs - Condensers - Heat Exchangers - Boilers

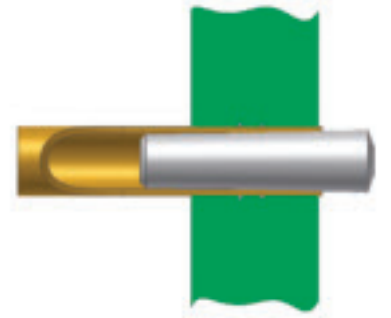
Wilson Tube Plugs offer a low-cost, quick, and efficient method of sealing leaking tubes. They are installed easily so that the pressure vessels get back on line. Minimum driving is required to establish a positive seal in seconds.

The tube plug and tube metal should always match. Fiber plugs require minimal driving since they tighten as they come in contact with water, but *fiber plugs should not be subjected to temperatures exceeding 105°C (221°F)!*

- Brass
- Carbon steel
- Stainless steel
- Fiber
- Monel (made to order)*
- Custom sizes and materials (We can make tube plugs from any material in any size. Contact us with your requirements.)

Tube plugs are packaged 10 per box, except 1½-inch Outer Diameter or larger plugs which are packaged individually.

Tube			Fiber Part No.	Brass Part No.	Carbon Steel	Stainless Steel	Monel*
OD	Wall	(SA 105)			(316)		
Inches	(mm)	GA			Part No.	Part No.	Part No.
3/8	(9.5)	17-22	22017	22023	22029	22041	22035
1/2	(12.7)	11-14					
		15-22	22018	22024	22030	22042	22036
5/8	(15.9)	11-14					
		15-22	22019	22025	22031	22043	22037
3/4	(19.1)	11-14					
		15-22	22020	22026	22032	22044	22038
7/8	(22.2)	11-14					
		15-22	22021	22027	22033	22045	22039
1	(25.4)	11-14					
		22022	39709	39710	39712	39711	
1⅛	(28.6)	15-22	22022	22028	22034	22046	22040
1¼	(31.8)		40506	40507	40508	41581	41580
1½	(34.9)		44063	41083	42163	41084	-
1⅝	(38.1)		-	41085	42164	41086	-
2	(50.8)		-	41233	42162	41235	-
2½	(63.5)		-	-	42600	-	-
3	(76.2)	10-13	-	-	42601	-	-
			-	-	42602	-	-



Two-Piece Tube Plugs - Condensers - Heat Exchangers

Tube			Ring & Pin Set Brass Part No.	Tube			Ring & Pin Set Brass Part No.
OD Inches	(mm)	Wall GA		OD Inches	(mm)	Wall GA	
5/8	(15.9)	13	22321-9445	7/8	(22.2)	12	22321-9622
		14	22321-9469			13	22321-9696
		15	22321-9491			14	22321-9719
		16	22321-9505			15	22321-9741
		17	22321-9519			16	22321-9755
		18	22321-9537			17	22321-9769
		19-20	22321-9551			18	22321-9787
3/4	(19.1)	21-22	22321-9571			19-20	22321-9801
		12	22321-9537			21-22	22321-9821
		13	22321-9571			12	22321-9787
		14	22321-9594			13	22321-9821
		15	22321-9616			14	22321-9844
		16	22321-9630			15	22321-9866
		17	22321-9644			16	22321-9880
		18	22321-9662	1	(24.5)	17	22321-9894
		19-20	22321-9676			18	22321-9912
		21-22	22321-9696			19-20	22321-9926
						21-22	22321-9946

How to use the tube plug

- For sealing off leaky condenser and heat exchanger tubes without damaging tubesheets.
- Place correct size ring in tube. (Order by tube Outer Diameter and Gauge)
- Tapered plug is driven into ring, which is tapered on the inside and is parallel to tube on the outside. This gives even expansion to the ring and a long contact to the seal. Available in a variety of metals: stainless steel 316 or 304, carbon steel, and others.



Expander Lube — Type B

Wilson Expander Lube is a water-soluble lubricant especially compounded for use with tube expanders. When rolling large or small, ferrous or non-ferrous tubes, use **Wilson Expander Lube** for smoother rolling and longer expander life. For clean tube ends after rolling, simply wash with water. **Wilson Type B** Expander Lube is used straight from the can without dilution.

Expander Lube Type B	Part No.
1 Quart Can	28115-0002
1 Gallon Can	28115-0009
5 Gallon Can	28115-0005
30 Gallon Drum	28115-0030
55 Gallon Drum	28115-0055



Hole Micrometer: Two Point



Features

- Measure tubesheet hole Inner Diameter up to 4.8 inches

Range	Part No.
0.400-1.400	28260
1.000-2.000	28261
1.600-3.600	28264
2.800-4.800	28265

Master setting rings are available upon request.

Condenser Tube Inserts



Features

- Offers permanent protection for new tubes or extended life for old condenser tubes already pitted or thinned at the entrance section.

Material	=	X
Nylon	=	0
Poly Propylene	=	1
TFE	=	2
TFE ZEL	=	3



Tube Cement
1/2-Pint Can
Part No. 62439

OD Inches (mm)	Condenser Tube Size			# of Inserts/ Cans of Cement*	Part No.	Insert Length
	GA	Wall	ID			
5/8 (15.9)	18	.049	.527	450/can	62438-X006	6
	20	.035	.555		62553-X006	
	16	.065	.620	250/can	62482-X004	4
3/4 (19.1)	16	.065	.620		62482-X006	6
	18	.049	.652		62440-X004	4
	18	.049	.652		62440-X006	6
7/8 (22.2)	16	.065	.745	200/can	62554-X006	6
	18	.049	.777		62386-X003	3
	18	.049	.777		62386-X006	6
	18	.049	.777		62386-X007	7
	16	.065	.870	150/can	62555-X006	6
1 (25.4)	17	.058	.884		62556-X006	
	18	.049	.902		62557-X006	
	18	.049	.902		62557-X008	8
	20	.035	.930		62558-X006	6

ESTIMATED REQUIREMENTS / CANS

5/8-Inch Tube - 450 Inserts
3/4-Inch Tube - 250 Inserts
7/8-Inch Tube - 200 Inserts
1-Inch Tube - 150 Inserts

*Cementing of TFE Inserts is not required.
They are made to a press fit.

Pneumatic Vise

Pneumatic Vise offers the most rugged, precision built, completely trouble-free air tool to remove the spear from the tube. The vise comes complete with two 5-foot air hoses, foot control valve with guard, and fittings ready for use.



Tube OD	Part No.
1 to 1½-Inch	74705-0000
5/8 to 1-Inch	74705-0625

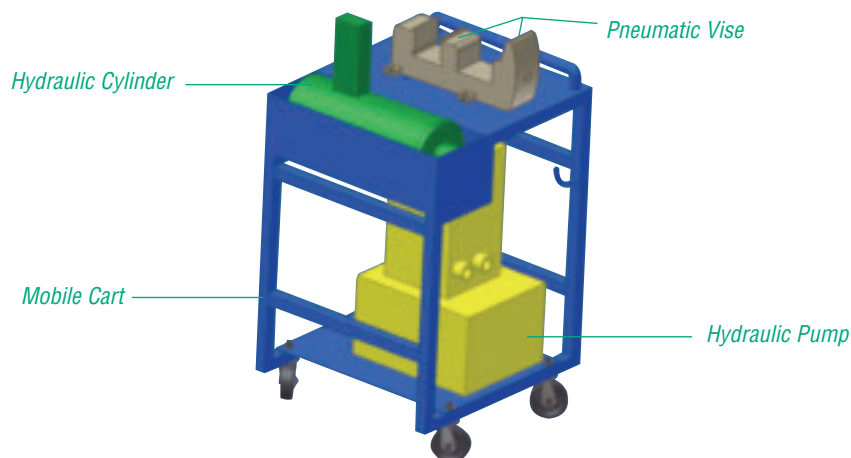
SPECIFICATIONS

Length	12"
Width	6"
Height	6"
Jaw Width	3"
Jaw Depth	2"
Wt. (Vise Only)	24 lbs.
Maximum Jaw Opening (Without Jaw Plates)	3"
Maximum Travel	5/8"
Maximum Operating Pressure:	150 psi
Gripping Force:	15x Air Line Pressure

Mobile Pump Cart

For Hydraulic Tube Puller Kit on pages 18 & 19
Part No. 75657-0000

Just load the tools and roll it to the field.



Linsen Flaring Expander



Tube OD		Expansion (inches)		Drive Dia. Inches	Expander Part No.
Inches	(mm)	Dia.	Length		
3/8	(9.5)	.390	5/8	1/4	75520
1/2	(12.7)	.515		5/16	75521
5/8	(15.9)	.640			75522
3/4	(19.1)	.765	3/4		75523
7/8	(22.2)	.890		3/8	75524
1	(25.4)	1.015	1		75525

The **Linsen Expanders** are power-driven tools designed for making tubing connections without fittings. It enlarges end of tube, leaving .015-inch clearance for slip fit, so that another tube can be inserted and soldered like a sweat fitting.

It is excellent for short bends, U-turns, copper, brass, aluminum, or thin steel tubing.

Flaring Tools



Features

- Flaring heat exchanger tubes that project outside the tubesheet
- Suitable for simultaneous flare and "seating" a flare into a countersunk tube of similar angle
- Flare angle produced is in accordance with ASME and U.S. Navy Boiler Code

OD		Tube	Wall	Part No.
Inches	(mm)		GA	
1/4	(6.4)		18-24	*22113
3/8	(9.5)		16-24	*22120
1/2	(12.7)		16-22	21875
5/8	(15.9)		14-15	22127
			16-22	20256
3/4	(19.1)		14-15	21017
			16-22	20259
7/8	(22.2)		14-15	22132
			16-22	20262
1	(25.4)		12-15	21053
			16-22	20265
1 1/8	(28.6)		12-15	40342
			16-22	40576
1 1/4	(31.8)		8-14	40342
			15-22	41224
1 3/8	(34.9)		8-14	41234
			15-22	41225
1 1/2	(38.1)		8-14	21903
			15-22	41226
2	(50.8)		7-14	22299

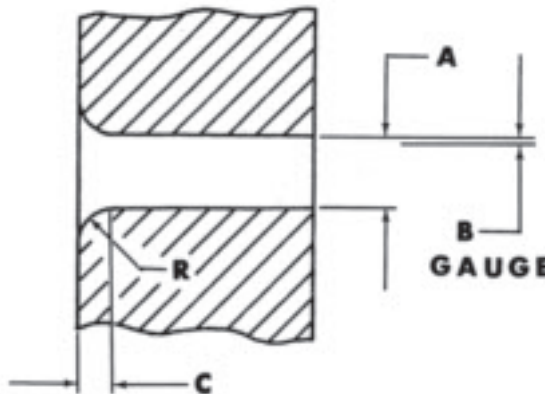
*For hand use only - No power shank provided

Belling Tools (Hand Shank Type)



Applications

- These special-order tools are made for tube inlet ends that require seating into the tubesheet, not projecting. Please use the drawing and chart to supply information to ensure a proper tool is provided. Specify hand- or power-driven.



A	B	C	R

Tubesheet Hole Radius Cutter



Features

- This high-speed steel tool is used to prepare tubesheets to suit flaring or the beading of tube ends. The rotating pilot is made to suit oversized reamed holes in the tubesheet.

OD Tubes		Tool Radius		Morse Taper	Radius Cutter Part No.
Inches	(mm)	Inches	(mm)		
1/2	(12.7)	1/8	(3.2)	2	20338
5/8	(15.9)	5/32	(4.0)		20224
3/4	(19.1)				20225
7/8	(22.2)	3/16	(4.8)		20226
1	(25.4)				20227
1 1/8	(28.6)	1/4	(6.4)		40512
1 1/4	(31.8)				21395

Packing Tools



Applications

- Used to rapidly insert packing into female-type tube joints

Inches	OD (mm)	Tube		Part No.
		Wall GA		
5/8	(15.9)	16		20308
		17		20309
		18		20310
3/4	(19.1)	15		21034
		16		20311
		17		20312
		18		20313
7/8	(22.2)	16		20314
		17		20315
		18		20316
1	(25.4)	16		20317
		17		20318
		18		20319

Packing Removal Tools



Applications

- Used to remove packing in female-type joints. Self-piloted and available in left- or right-hand configurations. They easily fit any standard drill.

Inches	OD (mm)	Wall GA	Shank Diameter		Rotation of Cut	
			Inches	(mm)	Right Hand Part No.	Left Hand Part No.
5/8	(15.9)	16	3/8	(9.5)	20320	39535
		17			20431	39536
		18			20432	39537
3/4	(19.1)	14			21883	39538
		15			21036	39539
		16			20435	39540
		17			20436	39541
		18			20437	39542
7/8	(22.2)	16			20321	39543
		17			20433	39544
		18			20434	39545
1	(25.4)	16	1/2	(12.7)	20438	39546
		17			20439	39547
		18			20440	39548

Thread Chasing Tools



Applications

- Used in conjunction with the packing removal tool, the thread chasing tool will remove any leftover packing material in tubesheet hole threads before repacking is done.

Tubesheet Thread	Part No.	OAL	Drive Square
7/8-16	74246-0016	3%	5/8
7/8-18	74246-0018		
1-16	74253-0016	3%	3/4
1-18	74253-0018		

Thickness of Wall in Birmingham Wire Gauge in Millimeters

TUBE			20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
OD (IN.)	OD (MM)	ID	.9	1.1	1.2	1.5	1.7	1.8	2.1	2.4	2.8	3.0	3.4	3.8	4.2	4.6	5.2	5.6	6.0	6.6	7.2	7.6	8.6
1/2	12.7	Min.	10.7	10.4	10.0	9.5	9.1	8.7	8.1	7.4	6.6	6.0											
		Nom.	10.9	10.6	10.2	9.8	9.4	9.0	8.5	7.9	7.2	6.6											
5/8	15.9	Min.	13.9	13.5	13.1	12.6	12.2	11.9	11.3	10.6	9.8	9.2	8.4	7.6	6.7	5.8							
		Nom.	14.1	13.7	13.4	12.9	12.6	12.2	11.7	11.0	10.3	9.8	9.1	8.4	7.5	6.7							
3/4	19.1	Min.	17.1	16.7	16.3	15.8	15.4	15.0	14.4	13.8	13.0	12.3	11.6	10.8	9.8	9.0	7.7	6.8	5.7	4.6			
		Nom.	17.3	16.9	16.6	16.1	15.7	15.4	14.8	14.2	13.5	13.0	12.2	11.5	10.7	9.9	8.7	7.9	7.0	5.9			
7/8	22.2	Min.	20.2	19.9	19.5	19.0	18.6	18.2	17.6	16.9	16.2	15.5	14.7	13.9	13.0	12.2	10.9	9.9	8.9	7.7			
		Nom.	20.4	20.1	19.7	19.3	18.9	18.6	18.0	17.4	16.7	16.1	15.4	14.7	13.8	13.1	11.9	11.0	10.1	9.1			
1	25.4	Min.	23.4	23.1	22.7	22.2	21.8	21.4	20.8	20.1	19.3	18.7	17.9	17.1	16.2	15.3	14.0	13.1	12.1	10.9	9.5	8.6	6.4
		Nom.	23.6	23.3	22.9	22.5	22.1	21.7	21.2	20.6	19.9	19.3	18.6	17.9	17.0	16.3	15.1	14.2	13.3	12.2	11.0	10.2	8.1
1-1/8	28.6	Min.	26.6	26.2	25.8	25.3	24.9	24.6	24.0	23.3	22.5	21.9	21.1	20.3	19.4	18.5	17.2	16.3	15.3	14.1	12.7	11.8	9.6
		Nom.	26.8	26.4	26.1	25.6	25.3	24.9	24.4	23.7	23.0	22.5	21.8	21.1	20.2	19.4	18.3	17.4	16.5	15.4	14.1	13.3	11.3
1-1/4	31.8	Min.	29.8	29.4	29.0	28.5	28.1	27.7	27.1	26.4	25.7	25.0	24.3	23.5	22.5	21.7	20.4	19.5	18.4	17.3	15.9	15.0	12.8
		Nom.	30.0	29.6	29.3	28.8	28.4	28.1	27.5	26.9	26.2	25.7	24.9	24.2	23.4	22.6	21.4	20.6	19.7	18.6	17.3	16.5	14.5
1-3/8	34.9	Min.	32.9	32.6	32.2	31.7	31.3	30.9	30.3	29.6	28.9	28.2	27.5	26.6	25.7	24.9	23.6	22.6	21.6	20.4	19.1	18.2	15.9
		Nom.	33.1	32.8	32.4	32.0	31.6	31.3	30.7	30.1	29.4	28.8	28.1	27.4	26.5	25.8	24.6	23.7	22.8	21.8	20.5	19.7	17.7
1-1/2	38.1	Min.	36.1	35.8	35.4	34.8	34.5	34.1	33.5	32.8	32.0	31.4	30.6	29.8	28.9	28.0	26.7	25.8	24.8	23.6	22.2	21.3	19.1
		Nom.	36.3	36.2	35.6	35.2	34.8	34.4	33.9	33.3	32.6	32.0	31.3	30.6	29.7	29.0	27.8	26.9	26.0	24.9	23.7	22.9	20.8
1-3/4	44.5	Min.	42.5	42.1	41.7	41.2	40.8	40.4	39.8	39.1	38.4	37.7	37.0	36.2	35.2	34.4	33.1	32.2	31.1	30.0	28.6	27.7	25.5
		Nom.	42.7	42.3	42.0	41.5	41.1	40.8	40.2	39.6	38.9	38.4	37.6	36.9	36.1	35.3	34.1	33.3	32.4	31.3	30.0	29.2	27.2
2	50.8	Min.	48.8	48.5	48.1	47.5	47.2	46.8	46.2	45.5	44.7	44.1	43.3	42.5	41.6	40.7	39.4	38.5	37.5	36.3	34.9	34.0	31.8
		Nom.	49.0	48.7	48.3	47.9	47.5	47.1	46.6	46.0	45.3	44.7	44.0	43.3	42.4	41.7	40.5	39.6	38.7	37.6	36.4	35.6	33.5
2-1/4	57.2	Min.	55.2	54.8	54.4	53.9	53.5	53.1	52.5	51.8	51.1	50.4	49.7	48.9	47.9	47.1	45.8	44.9	43.8	42.7	41.3	40.4	38.2
		Nom.	55.4	55.0	54.7	54.2	53.8	53.5	52.9	52.3	51.6	51.1	50.3	49.6	48.8	48.0	46.8	46.0	45.1	44.0	42.7	41.9	39.9
2-1/2	63.5	Min.	61.5	61.2	60.8	60.2	59.9	59.5	58.9	58.2	57.4	56.8	56.0	55.2	54.3	53.4	52.1	51.2	50.2	49.0	47.6	46.7	44.5
		Nom.	61.7	61.4	61.0	60.6	60.2	59.8	59.3	58.7	58.0	57.4	56.7	56.0	55.1	54.4	53.2	52.3	51.4	50.3	49.1	48.3	46.2
2-3/4	69.9	Min.	67.9	67.5	67.1	66.6	66.2	65.8	65.2	64.5	63.8	63.1	62.4	61.6	60.6	59.8	58.5	57.6	56.5	55.4	54.0	53.1	50.9
		Nom.	68.1	67.7	67.4	66.9	66.5	66.2	65.6	65.0	64.3	63.8	63.0	62.3	61.5	60.7	59.5	58.7	57.8	56.7	55.4	54.6	52.6
3	76.2	Min.	74.2	73.9	73.5	72.9	72.6	72.2	71.6	70.9	70.1	69.5	68.7	67.9	67.0	66.1	64.8	63.9	62.9	61.7	60.3	59.4	57.2
		Nom.	74.4	74.1	73.7	73.3	72.9	72.5	72.0	71.4	70.7	70.1	69.4	68.7	67.8	67.1	65.9	65.0	64.1	63.0	61.8	61.0	58.9
3-1/4	82.6	Min.	80.6	80.2	79.8	79.3	78.9	78.5	77.9	77.2	76.5	75.8	75.1	74.3	73.3	72.5	71.2	70.3	69.2	68.1	66.7	65.8	63.6
		Nom.	80.8	80.4	80.1	79.6	79.2	78.9	78.3	77.7	77.0	76.5	75.7	75.0	74.2	73.4	72.2	71.4	70.5	69.4	68.1	67.3	65.3
3-1/2	88.9	Min.	86.9	86.6	86.2	85.6	85.3	84.9	84.3	83.6	82.8	82.2	81.4	80.6	79.7	78.8	77.5	76.6	75.6	74.4	73.0	72.1	69.9
		Nom.	87.1	86.8	86.4	86.0	85.6	85.2	84.7	84.1	83.4	82.8	82.1	81.4	80.5	79.8	78.6	77.7	76.8	75.7	74.5	73.7	71.6
3-3/4	95.3	Min.	93.3	92.9	92.5	92.0	91.6	91.2	90.6	89.9	89.2	88.5	87.8	87.0	86.0	85.2	83.9	83.0	81.9	80.8	79.4	78.5	76.3
		Nom.	93.5	93.1	92.8	92.3	91.9	91.6	91.0	90.4	89.7	89.2	88.4	87.7	86.9	86.1	84.9	84.1	83.2	82.1	80.8	80.0	78.0
4	101.6	Min.	99.6	99.3	98.9	98.3	98.0	97.6	97.0	96.3	95.5	94.9	94.1	93.3	92.4	91.5	90.2	89.3	88.3	87.1	85.7	84.8	82.6
		Nom.	99.8	99.5	99.1	98.7	98.3	97.9	97.4	96.8	96.1	95.5	94.8	94.1	93.2	92.5	91.3	90.4	89.5	88.4	87.2	86.4	84.3
4-1/2	114.3	Min.	112.3	112.0	111.6	111.0	110.7	110.3	109.7	109.0	108.2	107.6	106.8	106.0	105.1	104.2	102.9	102.0	101.0	99.8	98.4	97.5	95.3
		Nom.	112.5	112.2	111.8	111.4	111.0	110.6	110.1	109.5	108.8	108.2	107.5	106.8	105.9	105.2	104.0	103.1	102.2	101.1	99.9	99.1	97.0
5	127.0	Min.	125.0	124.7	124.3	123.7	123.4	123.0	122.4	121.7	120.9	120.3	119.5	118.7	117.8	116.9	115.6	114.7	113.7	112.5	111.1	110.2	108.0
		Nom.	125.2	124.9	124.5	124.1	123.7	123.3	122.8	122.2	121.5	120.9	120.2	119.5	118.6	117.9	116.7	115.8	114.9	113.8	112.6	111.8	109.7

ADDITIONAL BIRMINGHAM WIRE GAUGES

NUMBER	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	00	000	0000	00000
MM	.1	.1	.2	.2	.2	.3	.3	.3	.4	.4	.5	.5	.6	.6	.7	.8	9.7	10.8	11.5	12.7

Thickness of Wall in Birmingham Wire Gauge in Inches

TUBE		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
OD	ID	.035	.042	.049	.058	.065	.072	.083	.096	.109	.120	.134	.148	.165	.180	.203	.220	.238	.259	.284	.300	.340
1/2	Min.	.422	.408	.392	.373	.357	.342	.318	.291	.260	.236											
	Nom.	.430	.416	.402	.384	.370	.356	.334	.310	.282	.260											
5/8	Min.	.547	.533	.517	.498	.482	.467	.443	.417	.385	.361	.330	.299	.262	.229							
	Nom.	.555	.541	.527	.509	.495	.481	.459	.435	.407	.385	.357	.329	.295	.265							
3/4	Min.	.672	.658	.642	.623	.607	.592	.568	.542	.510	.486	.455	.424	.387	.354	.303	.266	.226	.180			
	Nom.	.680	.666	.652	.634	.620	.606	.584	.560	.532	.510	.482	.454	.420	.390	.344	.310	.274	.232			
7/8	Min.	.797	.783	.767	.747	.732	.717	.693	.666	.636	.611	.580	.549	.512	.479	.428	.391	.351	.305			
	Nom.	.805	.791	.777	.759	.745	.731	.709	.685	.657	.635	.607	.579	.545	.515	.469	.435	.399	.357			
1	Min.	.922	.908	.892	.873	.857	.842	.818	.791	.761	.736	.706	.675	.637	.604	.553	.516	.476	.430	.375	.340	.252
	Nom.	.930	.916	.902	.884	.870	.856	.834	.810	.782	.760	.732	.704	.670	.640	.594	.560	.524	.482	.432	.400	.320
1-1/8	Min.	1.047	1.033	1.017	.997	.982	.967	.943	.916	.886	.861	.831	.800	.762	.729	.678	.641	.601	.555	.500	.465	.377
	Nom.	1.055	1.041	1.027	1.009	.995	.981	.959	.935	.907	.885	.857	.829	.795	.765	.719	.685	.649	.607	.557	.525	.445
1-1/4	Min.	1.172	1.158	1.142	1.122	1.107	1.092	1.068	1.041	1.011	.986	.956	.925	.887	.854	.803	.766	.726	.680	.625	.590	.502
	Nom.	1.180	1.166	1.152	1.134	1.120	1.106	1.084	1.060	1.032	1.010	.982	.954	.920	.890	.844	.810	.774	.732	.682	.650	.570
1-3/8	Min.	1.297	1.283	1.267	1.247	1.232	1.217	1.192	1.166	1.136	1.111	1.081	1.049	1.012	.979	.928	.891	.851	.805	.750	.715	.627
	Nom.	1.305	1.291	1.277	1.259	1.245	1.231	1.209	1.185	1.157	1.135	1.107	1.079	1.045	1.015	.969	.935	.899	.857	.807	.775	.695
1-1/2	Min.	1.422	1.408	1.392	1.372	1.357	1.342	1.318	1.291	1.260	1.236	1.205	1.174	1.137	1.104	1.053	1.016	.976	.930	.875	.840	.752
	Nom.	1.430	1.426	1.402	1.384	1.370	1.356	1.334	1.310	1.282	1.260	1.232	1.204	1.170	1.140	1.094	1.060	1.024	.982	.932	.900	.820
1-3/4	Min.	1.672	1.658	1.642	1.622	1.607	1.592	1.568	1.541	1.510	1.486	1.455	1.424	1.387	1.354	1.303	1.266	1.226	1.180	1.125	1.090	1.002
	Nom.	1.680	1.666	1.652	1.634	1.620	1.606	1.584	1.560	1.532	1.510	1.482	1.454	1.420	1.390	1.344	1.310	1.274	1.232	1.182	1.150	1.070
2	Min.	1.922	1.908	1.892	1.872	1.857	1.842	1.817	1.791	1.760	1.736	1.705	1.674	1.637	1.604	1.553	1.516	1.476	1.430	1.375	1.340	1.252
	Nom.	1.930	1.916	1.902	1.884	1.870	1.856	1.834	1.810	1.782	1.760	1.732	1.704	1.670	1.640	1.594	1.560	1.524	1.482	1.432	1.400	1.320
2-1/4	Min.	2.172	2.158	2.142	2.122	2.107	2.092	2.068	2.041	2.010	1.986	1.955	1.924	1.887	1.854	1.803	1.766	1.726	1.680	1.625	1.590	1.502
	Nom.	2.180	2.166	2.152	2.134	2.120	2.106	2.084	2.060	2.032	2.010	1.982	1.954	1.920	1.890	1.844	1.810	1.774	1.732	1.682	1.650	1.570
2-1/2	Min.	2.422	2.408	2.392	2.372	2.357	2.342	2.317	2.291	2.260	2.236	2.205	2.174	2.137	2.104	2.053	2.016	1.976	1.930	1.875	1.840	1.752
	Nom.	2.430	2.416	2.402	2.384	2.370	2.356	2.334	2.310	2.282	2.260	2.232	2.204	2.170	2.140	2.094	2.060	2.024	1.982	1.932	1.900	1.820
2-3/4	Min.	2.672	2.658	2.642	2.622	2.607	2.592	2.567	2.541	2.510	2.486	2.455	2.424	2.387	2.354	2.303	2.266	2.226	2.180	2.125	2.090	2.002
	Nom.	2.680	2.666	2.652	2.634	2.620	2.606	2.584	2.560	2.532	2.510	2.482	2.454	2.420	2.390	2.344	2.310	2.274	2.232	2.182	2.150	2.070
3	Min.	2.922	2.908	2.892	2.872	2.857	2.842	2.817	2.791	2.760	2.736	2.705	2.674	2.636	2.604	2.553	2.516	2.476	2.430	2.375	2.340	2.252
	Nom.	2.930	2.916	2.902	2.884	2.870	2.856	2.834	2.810	2.782	2.760	2.732	2.704	2.670	2.640	2.594	2.560	2.524	2.482	2.432	2.400	2.320
3-1/4	Min.	3.172	3.158	3.142	3.122	3.107	3.092	3.067	3.041	3.010	2.986	2.955	2.924	2.887	2.854	2.803	2.766	2.726	2.680	2.625	2.590	2.502
	Nom.	3.180	3.166	3.152	3.134	3.120	3.106	3.084	3.060	3.032	3.010	2.982	2.954	2.920	2.890	2.844	2.810	2.774	2.732	2.682	2.650	2.570
3-1/2	Min.	3.422	3.408	3.392	3.372	3.357	3.342	3.317	3.291	3.260	3.236	3.205	3.174	3.137	3.104	3.053	3.016	2.976	2.930	2.875	2.840	2.752
	Nom.	3.430	3.416	3.402	3.384	3.370	3.356	3.334	3.310	3.282	3.260	3.232	3.204	3.170	3.140	3.094	3.060	3.024	2.982	2.932	2.900	2.820
3-3/4	Min.	3.672	3.658	3.642	3.622	3.607	3.592	3.567	3.541	3.510	3.486	3.455	3.424	3.387	3.354	3.303	3.266	3.226	3.180	3.125	3.090	3.002
	Nom.	3.680	3.666	3.652	3.634	3.620	3.606	3.584	3.560	3.532	3.510	3.482	3.454	3.420	3.390	3.344	3.310	3.274	3.232	3.182	3.150	3.070
4	Min.	3.922	3.908	3.892	3.872	3.857	3.842	3.817	3.791	3.760	3.736	3.705	3.674	3.637	3.604	3.553	3.516	3.476	3.430	3.375	3.340	3.252
	Nom.	3.930	3.916	3.902	3.884	3.870	3.856	3.834	3.810	3.782	3.760	3.732	3.704	3.670	3.640	3.594	3.560	3.524	3.482	3.432	3.400	3.320
4-1/2	Min.	4.422	4.408	4.392	4.372	4.357	4.342	4.317	4.291	4.260	4.236	4.205	4.174	4.137	4.104	4.053	4.016	3.976	3.930	3.875	3.840	3.752
	Nom.	4.430	4.416	4.402	4.384	4.370	4.356	4.334	4.310	4.282	4.260	4.232	4.204	4.170	4.140	4.094	4.060	4.024	3.982	3.932	3.900	3.820
5	Min.	4.922	4.908	4.892	4.872	4.857	4.842	4.817	4.791	4.760	4.736	4.705	4.674	4.637	4.604	4.553	4.516	4.476	4.430	4.375	4.340	4.252
	Nom.	4.930	4.916	4.902	4.884	4.870	4.856	4.834	4.810	4.782	4.760	4.732	4.704	4.670	4.640	4.594	4.560	4.524	4.482	4.432	4.400	4.320

ADDITIONAL BIRMINGHAM WIRE GAUGES

NUMBER	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	00	000	0000	00000
INCH	.004	.005	.007	.008	.009	.010	.012	.013	.014	.016	.018	.020	.022	.025	.028	.032	.380	.425	.454	.500

Rental Equipment - Complete Equipment Kits Available for Rental

Torq-Air-Matic™ 3A

Page 10

Kit includes:

- Torq-Air-Motor™ Drive with Dead Handle
- 3/8-Inch Square Mandrel Connector • Lubricator
- 3/8-Inch Inner Diameter Hose (8 Feet) • 1/8-Inch Hex Key
- 5/16-Inch Hex Key • Tool Box with Service Manual

Tube OD		Tube Material	rpm	Weight	Kit No.
Inches	(mm)				
1/2 - 1	(12.7 - 25.4)	Non-Ferrous	750	9 lbs.	R40510
1/2 - 3/4	(12.7 - 19.1)	Ferrous			
1/2 - 1 1/4	(12.7 - 31.8)	Non-Ferrous	450	9 lbs.	R40511
1/2 - 1	(12.7 - 25.4)	Ferrous			

Torq-Air-Matic™ B

Page 10

Kit includes:

- Torq-Air-Motor™ Drive with Dead Handle
- 1/2-Inch Square Mandrel Connector • Lubricator
- 3/4-Inch Inner Diameter Hose (25 Feet)
- 1/8-Inch Hex Key • Tool Box with Service Manual

Tube OD		Tube Material	rpm	Weight	Kit No.
Inches	(mm)				
3/4 - 1 1/2	(19.1 - 38.1)	Non-Ferrous	450	14 1/2 lbs.	R40517
		Ferrous			

Wils-Tronic™ Electronic Tube Roller

Page 14

Kit includes:

- Electronic Control Unit • Motor (Variable Speed)
- Telescopic Shaft • Portable Rolling Stand

Tube OD		Weight	Kit No.
Inches	(mm)		
1/2 - 1 1/2	(12.7 - 38.1)	350 lbs.	R46000
3/4 - 3	(19.1 - 76.2)	400 lbs.	R46500

Electronic Torque Control Tube Roller Page 12-13

Kit includes:

- Digital Torque Control Box (Auto-Reverse)
- Electric Rolling Motor • Power Cord • Carrying Case

Tube OD		Weight	Kit No.
Inches	(mm)		
5/8 - 1	(15.9 - 25.4)	26 lbs.	R76190-01

VLD (Vacuum Leak Detector)

Page 24

Kit includes:

- Vacuum Leak Detector • T-Handle Tube Plug
- 1/4 to 3/4-Inch, 5/8 to 1 1/4 or 1 1/2 to 2-Inch Nozzle (as requested)
- 3/8-Inch Inner Diameter Hose (12 feet) • Tool Box with Service Manual

Tube OD		Weight	Kit No.
Inches	(mm)		
1/4 - 3/4	(6.4 - 19.1)	2 1/4 lbs.	R9836-1002
5/8 - 1 1/4	(15.9 - 31.8)	2 1/4 lbs.	R9836-1003
1 1/2 - 2	(28.6 - 50.8)	2 1/4 lbs.	R9836-1004

WPP-1500 & WAP-1000 Tube Puller

Page 18

Kit includes:

- Hydraulic Cylinder • Hydraulic Hose
- Pump Unit • Chair/Load Cap • Notched Extension
- Hydraulic Oil (2 gallons) • Operations Manual

Tube OD		Power	Weight	Kit No.
Inches	(mm)			
1/2 - 1	(12.7 - 25.4)	Air	25 lbs.	RWAP10-0000
1/2 - 1 1/2	(12.7 - 38.1)	Electric	45 lbs.	RWPP15-0000

Collet Spear Type Tube Puller

Page 19

Kit includes:

- Extractor Gun • Pump Unit • Power Hose and On/Off Assembly
- Gripper Set (includes small, medium and large plus Mandrel and Stop)

Tube OD		GA	Weight	Kit No.
Inches	(mm)			
5/8	(15.9)	16-22	15 lbs.	R75700-0062
3/4	(19.1)			R75700-0075
7/8	(22.2)			R75700-0087
1	(25.4)			R75700-0100
1 1/4	(31.8)			R75700-0125

Smarter Tools for Smarter Work

What are *Smart Tools*?

Smarter Tools for Smarter Work is more than just our tagline. We realize that the single largest cost of fabricating, maintaining, repairing, or cleaning a boiler, heat exchanger, or other pressure vessel is labor. That's why we build time-saving, labor-reducing, error-preventing expertise into all of the tools we design, manufacture, sell, service, and support.

The **Wilson Torq-Air-Matic™ Expander Drive** is a good example of a *Smart Tool*. It prevents the operator from over-rolling or under-rolling a tube, saving both the material and labor costs of re-rolling under-rolled tubes, or pulling and replacing over-rolled tubes. The **Wilson i.d.mike, Combination Beading Expander**, and the entire line of **Wils-Away™ Tube Cleaning Systems** are "expert" tools that have time-saving, labor-reducing features built into them.

We look forward to the opportunity to help you and your employees *Work Smarter* by using *Smarter Tools* from **Thomas C. Wilson, Inc.**



*Smarter Tools for
Smarter Work*

We're In the Solution Business!

Many of the innovative tools offered by **Thomas C. Wilson, Inc.** are the result of a customer who came to us with a problem, for which we created a solution. If you have a tube cleaning, tube expanding, or tube cutting, pulling, trimming, facing, or plugging challenge, contact us and give us the opportunity to suggest or invent a solution.

If you have drawings, you can mail or fax them to us. Or, you can ship us a sample of the tube or device you are attempting to expand, clean, cut, taper, trim, or otherwise work with. Or, you can call us with the specifics of the job you face, and we'll work with you to find a solution.

Before you call us, here's some of the information you should have:

- What type of vessel (fire tube boiler, condenser, chiller, heat exchanger, etc.) is involved?
- What is the Outer Diameter (OD) of the tube or tubes?
- What is the Gauge (GA) or thickness of the tube wall?
- From what material are the tubes made?
- How many tubes are there?
- What is the thickness of the tubesheet?
- Is compressed air available at the work site?
- What type of electric power (voltage and Hertz) is available?
- If it is a cleaning application, is water available on-site?

We look forward to hearing from you!



Quick Reference Catalog

An easy-to-use overview of Wilson's electric and pneumatic tube cleaning systems for heat exchangers, fire tube and water tube boilers, condensers, chillers, and absorbers, as well as other Wilson tools, accessories, and supplies.



Boiler Tube Expanders and Accessories Catalog

A comprehensive guide to all the tools you need to tube or re-tube water tube or fire tube boilers. Includes pneumatic and electric tube rollers, tube cutters, beading and collapsing tools, as well as tube plugs and accessories.



Tube Cleaners and Accessories Catalog

A detailed guide to the most extensive line of tube cleaning equipment and accessories available anywhere, including electric, pneumatic, and air-driven tube cleaning systems, spiral and expanding brushes, cutter heads and cutter bits, Blo-Guns and Blo-Brushes, and Shafts & Casings.



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